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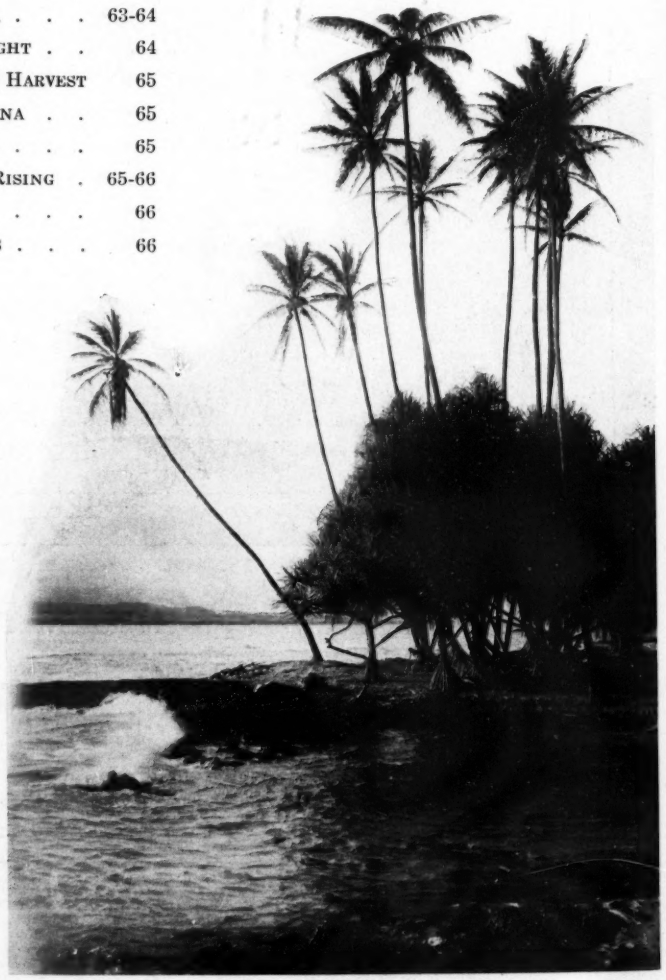
From the cocoanut islands of the Pacific—such as this in Hilo Bay, Hawaii—come great quantities of copra and coir, important items in the world's commerce



THE WAR AND THE COTTON INDUSTRY

Some Economic Effects of the Great Conflict — Recovery from Depression Rapid

SINCE the outbreak of the great war a year ago economic changes have occurred, the ultimate results of which no one even now can with certainty foresee. Coming, as it did, with startling abruptness, and rapidly widening in its scope, the European conflict at once caused temporary paralysis of all the world's markets and practically complete disorganization of the machinery of commerce and finance. At the outset countries were to a large extent isolated, in so far as the ordinary means of transportation were concerned; the finely organized system of international exchanges was shattered, and for a time the distribution of the necessities of life was seriously hindered. This, in a general way, briefly sums up the immediate effects of the cataclysm abroad, and, though order was quickly restored out of the chaos existing last summer, twelve months later many problems are still presented and normal conditions will not be possible as long as the struggle at arms continues.

Probably to no other field of human endeavor did the war bring more difficulties or greater handicaps than to the cotton industry of the United States. And nowhere else has the recovery from depression and demoralization been more striking. Unlike the growers of wheat and some other foodstuffs, who profited substantially by the augmented demand and enhanced quotations for these commodities, the cotton planters were confronted with the prospect of a vastly diminished consumption and an actual collapse of values when hostilities commenced last August. After years of remunerative prices, the great staple suddenly slumped to 6c. a pound in the southern markets, and, while only small quantities were really moved at this exceptional figure, quotations nevertheless remained below the cost of production for a considerable period.

Exactly to what extent the conflict in Europe has affected the prosperity of the American cotton farmers is largely a matter of conjecture, but heavy losses have been experienced and these will be felt for some time to come. During the week prior to the declaration of war the raw material ruled at 13¼c. in the New York market, but before the end of July, 1914, when operations on all the leading exchanges were suspended, there had been a recession of ¾c. a pound, or almost $4 a bale. Business was not generally resumed until around the middle of November and then the official quotation was 7¾c. a pound, while later

These four-wheeled floats, made for hauling cotton, are fast being displaced by motor trucks that carry 25 bales

At all the great cotton shipping ports of the United States thousands of bales of cotton are on the docks ready for shipment. The picture shows a wharf at Galveston, Texas, the chief of the export gateways

on there was a further drop of ½c., thus making a total decline of exactly 6c., or $30 a bale, in a little over four months. Prices have since recovered a considerable part of the lost ground, but are still about $18 a bale lower than they were just before the outbreak of the war.

In view of the record-breaking crop raised in the United States last year, it is probable that values would have ultimately receded to a lower basis even without the influence of the war, yet with consumptive demands maintained no such shrinkage as actually occurred could have taken place. Under normal conditions the huge yield of over 16,600,000 bales, while it might have been expected to depress prices to some extent, would not in itself have caused demoralization because the world's requirements are steadily increasing, and what was considered an ample cotton supply a decade or so ago would be inadequate now. With Europe engaged in strife, however, and the foreign markets temporarily closed, the question of finding an outlet for the biggest crop ever grown was a problem that loomed large in the eyes of the cotton trade at this time a year ago.

Cotton, in a ship's hold, must be packed as tightly as possible. The picture shows this being done by screw jacks

While bare statistics by no means tell the whole story, some comparisons of export figures will give a good idea of how the outbreak of the war at once prostrated one branch of the cotton industry. During the fiscal year 1913-14 there were exported from the United States about 9,165,000 bales, of which more than two-thirds went to England and Germany. Next in order, as the largest purchasers, came France, Italy, Japan, Spain, Belgium and Canada. When all but two of these nations took up arms last summer cotton shipments from American ports were virtually suspended and in August, when hostilities became general, only the negligible quantity of 21,210 bales was sent abroad against something over 257,000 bales in the same month of 1913. Subsequently, as the trade recovered from the shock of the world disaster, the movement became more active, but the lack of adequate vessel room, high ocean freight rates, insurance, etc., all militated against a normal outgo and during the first three months of the war less than 650,000 bales were exported, as compared with fully 2,700,000 bales in the previous season—a falling off of more than 75 per cent.

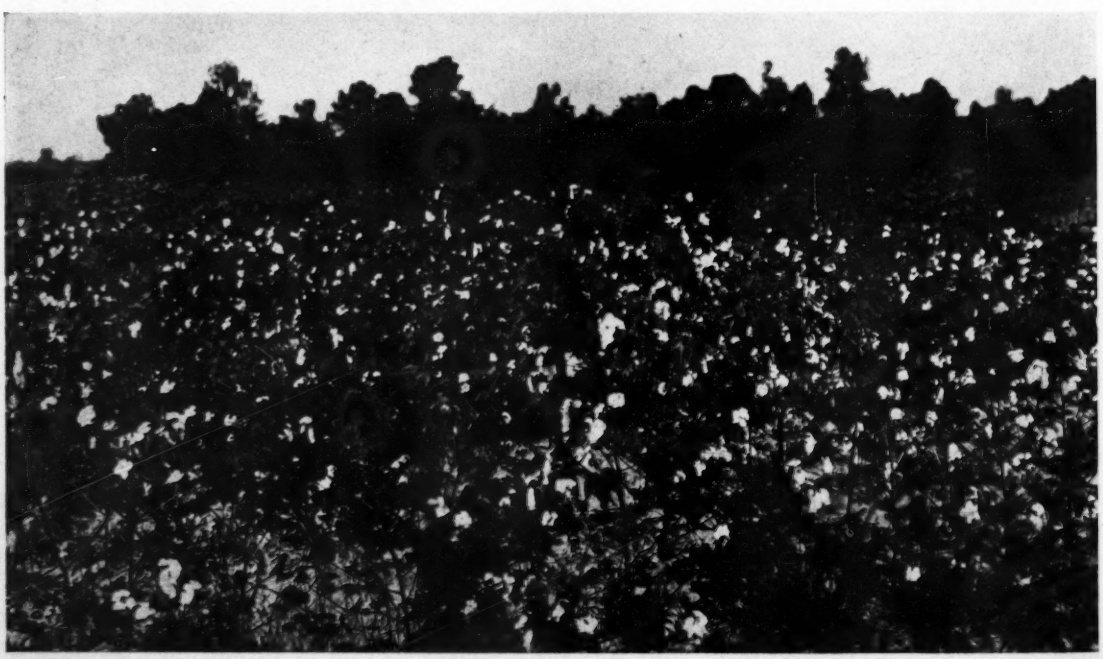
Up to this period, that is, to the end of October, not quite 290,000 bales had been taken by the United Kingdom, while practically no cotton whatever had gone direct to Germany and Austria-Hungary, and Belgium received little more than 1,000 bales. Moreover, France took scarcely 22,300 bales. The extent of the decline in the movement to these countries will be appreciated when it is pointed out that in August, September and October of the preceding year over 968,000 bales were sent to the United Kingdom, about 829,000 to Germany, over 464,000 to France, 63,600 to Belgium and approximately 20,000 bales to Austria-Hungary. Obviously, the outgo to Germany showed the greatest decrease.

Hard hit as it was by the war, however, the cotton trade was quick to recover from its depressed and demoralized condition. Especially is this true of the export situation. Even last December, when for the first time the monthly clearances got above the million-bale mark, no one was willing to venture a guess that shipments for the current season would be more than 5,000,000 bales. Yet, as a matter of fact, this total was considerably exceeded three months later and, at the present writing, with another month of the crop year remaining, the outgo from the United States amounts to over 8,000,000 bales, or only about 800,000 bales less than up to the same date in the previous season. In other words, instead of the 75 per cent. decrease shown in the first three months of the war, the exports now disclose a reduction of not quite 10 per cent.

Brief data on the distribution of the cotton shipped from American ports since the end of last October brings to light some interesting facts. From that time on the movement

A Louisiana cotton field, typical of thousands of others in the great belt in the Southern States of America, where this staple is grown in such abundance that it is the principal source of natural wealth

Courtesy "Gulf States Farmer"



quickly got back to normal volume and up to May, of this year, considerably over 2,900,000 bales had gone to the United Kingdom, or 760,000 bales more than in 1913-14, while the 530,000 bales received by France did not fall far short of the amount taken by that country in the same six months of the preceding year. But the outstanding feature has been the heavy exports to Italy and "other Europe," including Norway, Sweden, Denmark, Switzerland and the Netherlands. For example, from October to May Italy increased its importations of American cotton by fully 180 per cent., while "other Europe" received 1,200,000 bales—or almost 20 times as much as in the previous season.

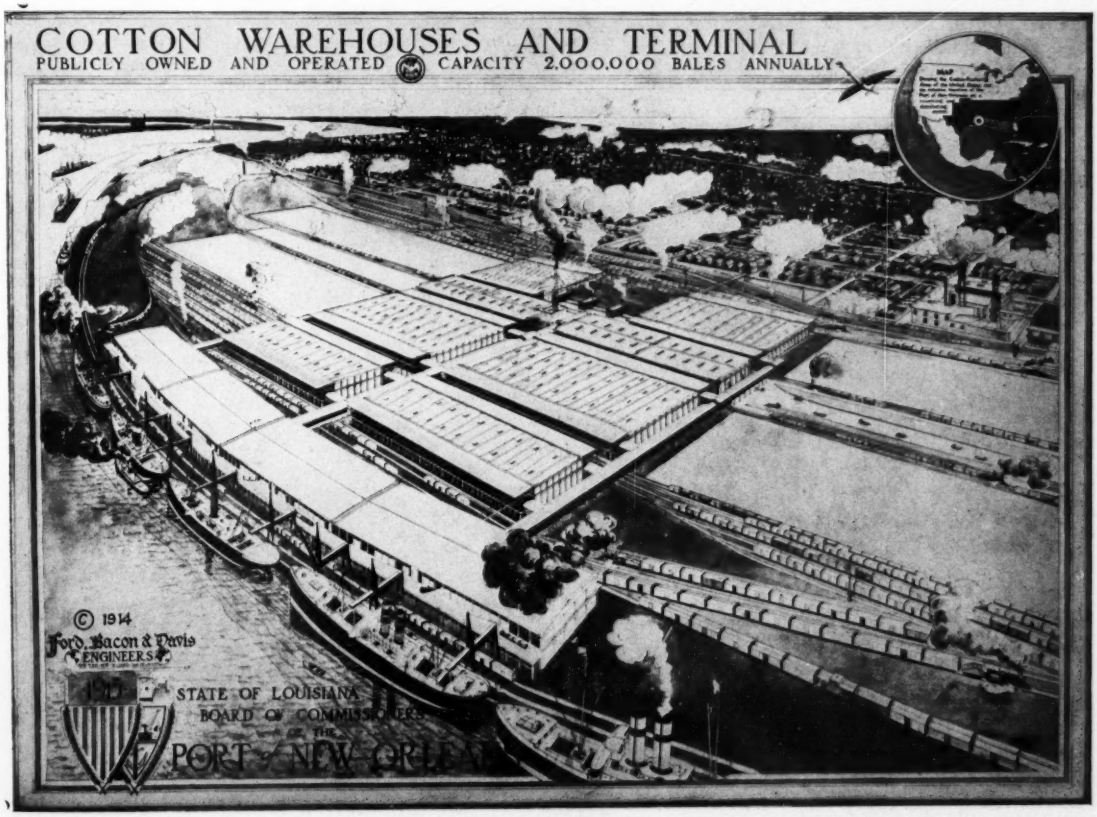
There is no means of telling how much cotton has actually got into Germany since the war broke out. Latest official figures show that something like 250,000 bales have gone direct there from the United States, but, of course, this does not represent the entire quantity that Germany has received. The big leap in the imports into Italy, Switzerland, Holland and the Scandinavian countries, which has been so striking a phenomenon, refutes any such idea. So far as is known, little or no Egyptian cotton has gone to Germany or Austria.

Rapid as the rehabilitation of the export trade has been, many people are in doubt as to the outlook for the coming season. Even of late, the movement has diminished at more than a normal rate and with Italy's participation in the war importations of cotton for the purpose of re-sale to Germany have naturally ceased. For this and other reasons, not a few believe that hereafter it will be extremely difficult for Germany and Austria to obtain the raw material, that is, as long as the struggle at arms continues. Several European countries have imported a great deal more cotton than was intended for use within their own borders and since England has taken the step of confiscating shipments to neutral ports, it seems improbable that the former heavy outgo will be maintained. Inasmuch as a new crop will soon be coming to market, American cotton men are not taking an especially cheerful view of the situation.

Without going into detailed figures to prove the assertion, Europe now has the largest supply of cotton on hand in the history of the trade. The accumulation—at a rough estimate it is something like 3,000,000 bales—comes at a time when the absorption by two of the most important consuming nations must be materially restricted, if not entirely cut off. How conditions will work out in the end not even the closest student can foretell. It is now generally realized that cotton is an indispensable commodity and there is no doubt that big quantities are being consumed in one way and another. Not only does the staple clothe people—and the men on the battle fronts are wearing out garments faster than they were ever worn out before—but it is also one of the materials of war and as such perhaps millions of bales are being utterly destroyed in the great conflict. Everything leads to the conclusion that the

Cotton in a pier shed at Galveston, ready to be loaded for Europe. Galveston is the greatest cotton port in the world

Courtesy Messrs. Ford, Bacon & Davis

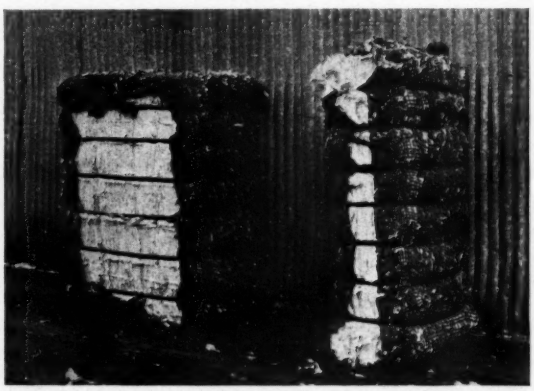


The Port of New Orleans proposes to spend $3,500,000 to build a system of cotton warehouses and terminals with a capacity of nearly 2,000,000 bales. The illustration shows how the project will look when finished

use of cotton for smokeless powder is offsetting to a large extent the falling off in the normal trade demand.

It has been one of the surprises of the year that American mills have taken only a comparatively moderate amount of cotton up to the present time. Early in the season it was hoped that cotton goods manufacturers in the United States might make such strides in developing foreign trade that the consumption of the raw material would mount to record figures, yet for the ten months ending with May the quantity actually consumed was less than 4,600,000 bales, exclusive of linters, against over 4,700,000 bales in 1913-14. There is a possible chance that this difference may be made up before the close of the season in July, but, at best, the ultimate result will not equal the previous optimistic expectations.

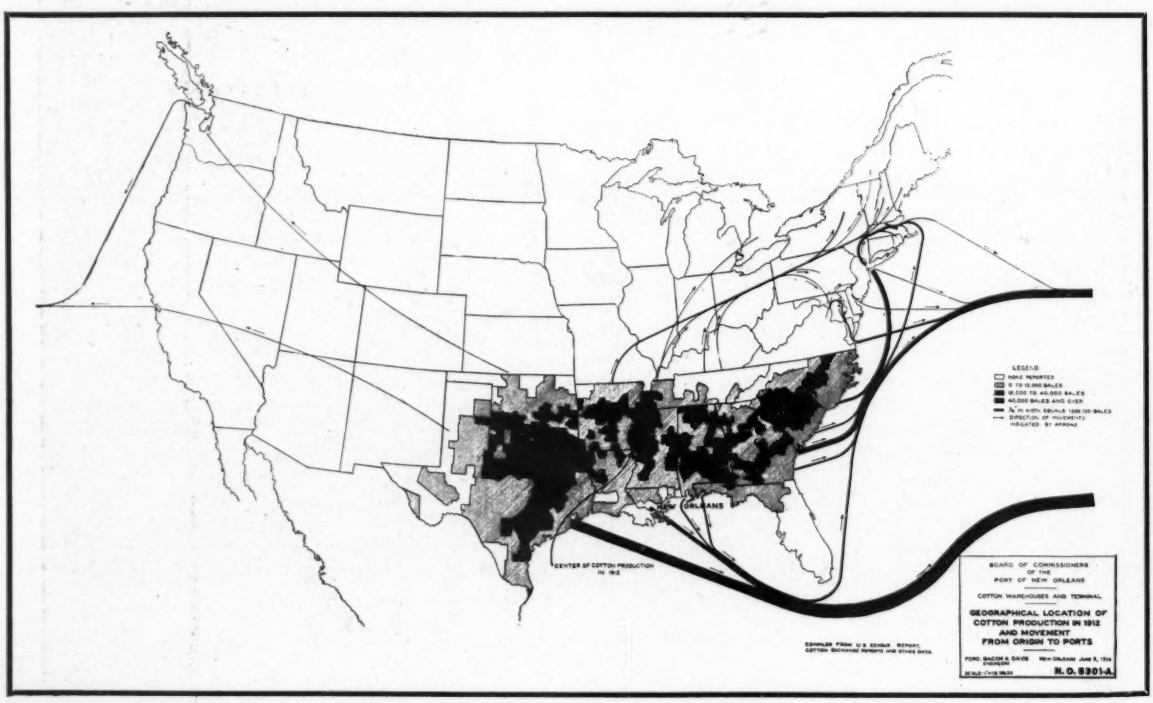
Cotton is graded and weighed before shipment. The illustration shows this being done at Norfolk, Virginia



Cotton is bulky in proportion to its weight and must be compressed. Here is a bale before and after compression

Although the textile industry was temporarily prostrated by the outbreak of the war, opportunities for commercial expansion have been presented that should enable American manufacturers in the future to occupy a much more prominent position in the international cotton goods markets. At a rough calculation, Great Britain in normal times produces nearly $900,000,000 worth of cotton goods annually and claims approximately 70 per cent. of the world's trade, whereas the United States, which raises two-thirds of the raw cotton grown, supplies only a comparatively small percentage of the finished material requirements of other countries. As a result of the conflict in Europe, however, foreign competition has become less of an obstacle and, while the demand from China has continued disappointing, prospects of a large trade with South America are particularly bright.

In spite of the derangement of international exchange and the additional handicap of the high cost of freights and insurance, there is statistical evidence of a steady increase in the foreign demand for cotton goods made in the United States. War emergency business has been a vital factor and shipments of cotton duck have reached unprecedented totals. The inability to obtain supplies from Austria, Belgium and other European countries has led to a larger inquiry for American goods of various descriptions, and during the ten months of the current fiscal year to May 1 exports of cotton manufactures reached a value of $57,900,000, thus exceeding by $4,000,000 the largest record of any complete fiscal year prior thereto. The highest level previously attained was $53,700,000 in 1913, while in 1906, when China was taking unusually large quantities of American cottons upon the re-opening of her markets at the close of the Russo-Japanese war, the amount


LEGEND
NEW ORLEANS
CENTER OF COTTON PRODUCTION IN 1912
BOARD OF COMMISSIONERS OF THE PORT OF NEW ORLEANS
COTTON WAREHOUSES AND TERMINAL
GEOGRAPHICAL LOCATION OF COTTON PRODUCTION IN 1912 AND MOVEMENT FROM ORIGIN TO PORTS
N. O. 8201-A

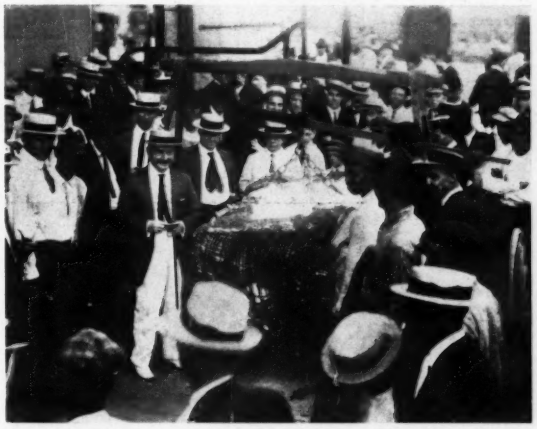
The white spaces show where no cotton is grown. Where the lines are diagonal the maximum production is 15,000 bales; crossed lines, 40,000 bales; black, 40,000 and over. Broad black lines show relative volume of movement

was $52,900,000. According to the official calculation, an export total of approximately $75,000,000 is the indicated record for the fiscal year 1915, while the balance of trade on the export side promises to be about $25,000,000, as against an import balance in every earlier year except 1907, when the excess of exports was about $1,000,000.

An exceptionally fine growth of cotton in a North Carolina field, a part of the famous American "cotton belt."

Probably few people other than those directly concerned appreciate just how vast an enterprise the textile industry of the United States really is. While it has no billion-dollar corporation, as has the steel trade, it boasts the biggest woolen mill organization in the world, the most extensive textile plant and the largest individual woolen, worsted, cotton, hosiery, silk and textile printing mills anywhere on the face of the globe. Figures make dry reading, but brief data of this kind is necessary to adequately express the size of the textile industry in the United States. As shown by the census of 1909, the capital invested in American textile manufacturing aggregated the huge sum of over $1,800,000,000 and practically a million persons found employment in turning out products having an annual value of close to $1,700,000,000.

During the last twenty years the annual value of textiles of American manufacture has more than doubled, and within the last quarter of a century the exports of cotton goods from the United States have totalled over $700,000,000, of which Asia has taken 34.65 per cent.; North America 31.84 per cent.; South America 11.70 per cent.; Europe 10.82 per cent.; Oceania 8.63 per cent., and Africa 2.36 per cent. China has been the largest importer of cloths, with the Philippine Islands, Central America and British Honduras, Canada, Haiti, Cuba, Aden and the British East Indies ranking next in the order named. Canada has been the chief market for laces and embroideries, while the United Kingdom, Canada and Cuba have been the main consumers of knit goods of American origin. As to yarn, most of it has gone to Canada, Hongkong, Argentina, Newfoundland and Colombia.

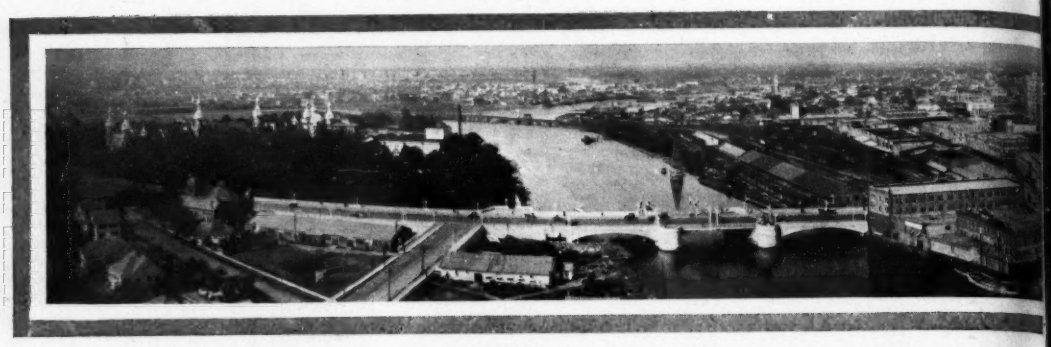


Courtesy South Carolina Department of Agriculture

A typical scene when war depressed the cotton market and everyone was urged to "buy a bale" to help the industry

Courtesy South Carolina Department of Agriculture

Cotton, throughout the Southern States, is the medium of barter—the coin of trade—especially among the small growers who bring a bale or so to the nearest town and exchange it for merchandise



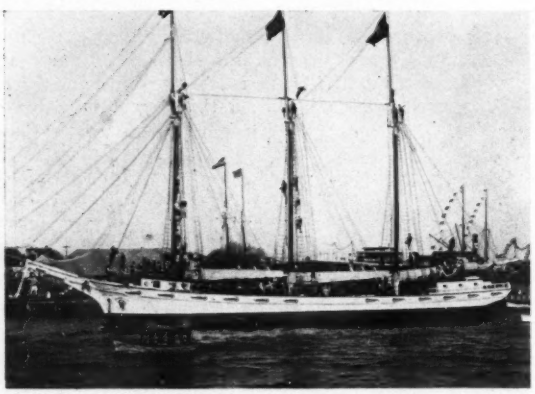
A panoramic view of the City of Tampa, on the Gulf Coast of Florida, famous for its great cigar factories

TAMPA, THE CIGAR CITY OF FLORIDA

Climate Made this the Foremost Havana Cigar Manufacturing Center in the World—Its Great Sponge and Phosphate Rock Industries

By Carl L. Mewborn, Manager of the Tampa Office of R. G. Dun & Co., and B. L. Hamner, of the Tampa Board of Trade

IF it had not been for the discovery that its climate was peculiarly adapted to the manufacture of cigars, Tampa, the famous tobacco city, on the Gulf Coast of Florida, might have remained an obscure fishing village.



Landing in Tampa of the "Pirate Krewe" of Gasparilla, an annual festival that attracts many visitors

Cigars have to be made under certain climatic conditions, or they will not retain the pleasing aroma that distinguishes their excellence. Havana, the center of the cigar manufacturing industry of Cuba, has an ideal climate for this purpose. But the import duties of the United States have always been considerably higher on cigars than on the leaf tobacco from which they are made. Therefore, many years ago, Cuban tobacco growers began searching for a place in the United States which would duplicate as nearly as possible the climatic conditions of Havana, so that they might establish cigar factories there and be able to market their product in America to better commercial advantages. Still another incentive was that the term "clear Havana" had come to be employed by every cigar smoker desiring something especially good. If a factory were established in the United States and the choicest Cuban leaf used in the manufacture of the cigars, "clear Havana" could be applied with equal truth to the product, and it could be sold at a less price than if made in Cuba.

Some 30 years ago, therefore, two Cuban firms of tobacco growers and manufacturers—V. Martinez Ybor & Edward Manrara, of Key West, Florida, and Sanchez & Haya, of New York City, were attracted by the climatic conditions of Tampa, less than 200 miles north of Havana, on a sheltered bay, opening into the warm waters of the Gulf of Mexico. Not long before, Tampa had been a comparatively isolated community, receiving its supplies by boat from Cedar Keys. Shortly before its discovery by the Cuban tobacco manufacturers, however, a railroad had been completed to Tampa, assuring excellent transportation facilities northward. The two firms established factories; they were successful. More and more tobacco houses from Cuba came and built more factories. In 1890 Tampa's population was 5,532; today it is 73,391.

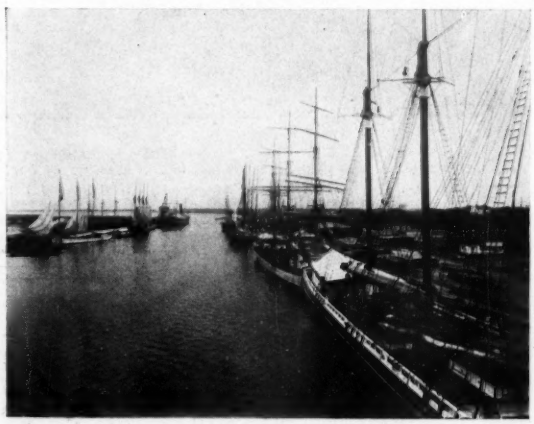
Tampa is now the largest "clear Havana" cigar manufacturing center in the world. It manufactures more cigars per annum than the Island of Cuba.

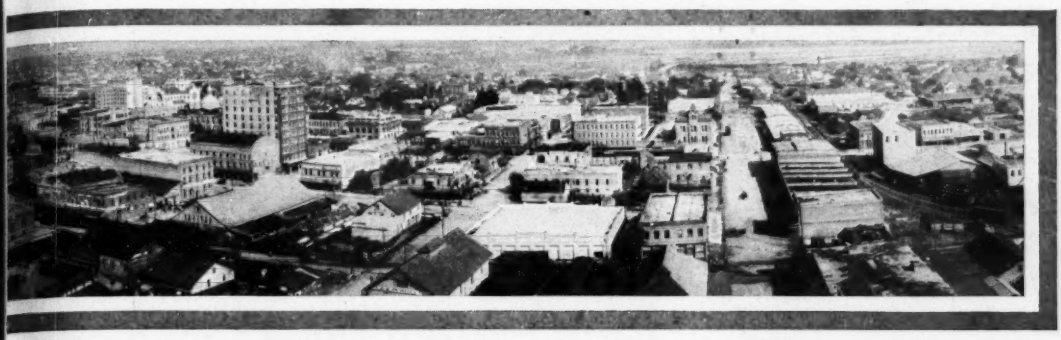
As a revenue producer Tampa stands tenth in the list of cities of the United States, largely by reason of its internal revenue and customs receipts from this one industry. Tampa's output for 1914 was 267,866,000 cigars. In some years this record has been exceeded. There are over 200 factories engaged in this line, many of which employ from 1,000 to 1,500 men at wages ranging from $15 to $50 per week. Tampa's customs receipts have totaled as much as $1,800,000 and internal revenue taxes have been as high as $890,000 per annum. The post office receipts in 1914 were $223,257.92, being an increase of more than $7,000 over the previous year.

The majority of the employees of the cigar factories are Spanish-speaking people. In all the larger shops and most of the smaller ones may be found at least one Spanish-speaking person. Nearly all of the younger generation can speak Spanish to some extent. It has been proposed, and is being seriously considered, that the study of Spanish be embodied in the curriculum of the public schools.

Until 1910 Tampa was always thought of as a one-industry city. During that year the cigar factories were closed about eight months, owing to a strike among the cigarmakers. Despite that, however, the bank clearings of the city were not affected 5 per cent. The largest dealers, both wholesale and retail, reported that during this period business showed an increase over the previous year. Then it was that Tampa realized the importance of the fact that within a radius of a few miles was being produced more than 80 per cent. of the phosphate rock of the United States, and more than 50 per cent. of the total output

Sailing vessels loading lumber at Tampa. These vessels carry their cargoes both coastwise and overseas





factories where only Havana tobacco is used, its sponge fisheries and its phosphate rock industry

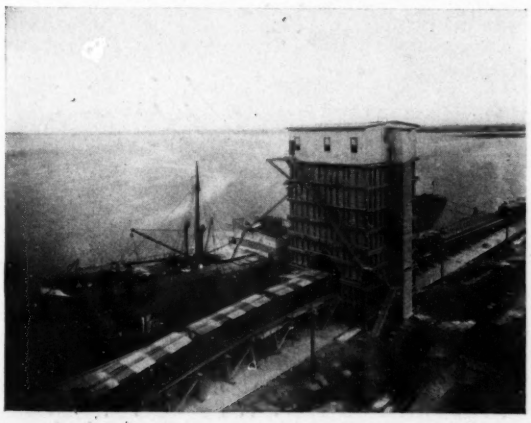
of the world. Practically all of this is handled through Tampa, making that city the greatest phosphate exporting port in the world. It was also realized that, within Tampa's trade territory limits, thousands of acres, which many supposed to be undeveloped lands, were annually yielding a golden harvest of citrus fruits, vegetables and farm products of all kinds. Then it was that Tampa began to give more attention to the diversification of industries. To-day the city has nearly 150 jobbing houses, all lines being represented.

Within a few miles of Tampa is Tarpon Springs, the second largest sponge fishing grounds of the world. The sponges are caught by Greek divers, and are sold at auction by the Sponge Exchange. In this one industry sales run upwards of $500,000 per annum.

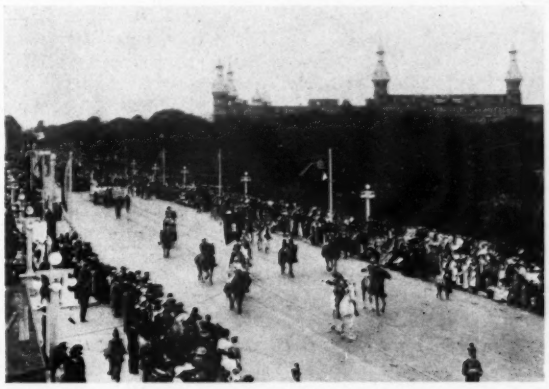
Tampa is the home of the Florida Citrus Exchange, Florida's co-operative citrus fruit marketing agency, which institution alone banks in Tampa over $4,500,000 a year. The thirteen counties, of which Tampa is the commercial center, produced in citrus fruits and vegetables, corn and hay, in 1914, $12,432,165, a production showing that every acre under cultivation produced an annual revenue far in excess of $100. Within this territory the cattle industry has attained to considerable proportions, with a general tendency towards improved stock.

The port of Tampa, it is claimed, is the nearest port of importance to the Panama Canal, the distance being 1,255 nautical miles. At the port of Tampa there are 24 feet of water, with the assurance of 30 feet within the next two years. The harbor is landlocked and as quiet as could be desired. An estuary is now being dredged, and on completion will give the port, including slips, about eight miles of municipally-owned and controlled harbor facilities. The water commerce of the port for 1914 totaled $37,321,781. The vessels and tonnage report for that year showed 909 vessels in and 904 vessels out; tonnage in, 1,337,369; tonnage out, 1,333,015. Of this amount 890,907 tons represented phosphate rock shipments. Of the phosphate shipments 550,200 tons went to foreign ports. In this item there has been a decrease this year as compared with 1914, due to the fact that European countries have heretofore been the largest phosphate customers. A large portion of the balance of exportations consists of yellow pine and cypress lumber, crossties, rosins and turpentine. Principal among the importations may be mentioned tobacco, from Cuba, and Spanish cedar, from South and Central American countries.

Loading phosphate rock for export. Half the phosphate rock in the world is shipped through Tampa



The belief that Tampa, by reason of her harbor facilities, her proximity to the Panama Canal and Pan-American countries and the progressiveness of her people, is destined to become a port of great importance seems not without reason. That this is being recognized is evidenced by the fact that the establishment of a direct steamship line from South American ports is already being projected.



"King Gasparilla, the Pirate Chief," in possession of Tampa on one of his annual merrymaking visits

Tampa's bank clearings, despite war conditions, showed in 1914 an increase over 1913. The total clearings for the year were $53,766,400.55. In 1908 they were $26,428,182.33. The banking capital in Tampa in 1906 was $1,500,000; in 1914 this had increased to over $3,500,000. Deposits in these banks have grown from $5,000,000 in 1906 to over $9,000,000 in 1914, but so constant and steady has been the increase that there has been no boom and no undue rise in property values, and there has been a constant demand for capital for building purposes.

During 1914 there were 1,567 building permits issued, aggregating $1,615,028.04, as against 1,481 permits totaling about $1,480,000 in 1913.

Not alone is Tampa growing rapidly in commercial importance, but it is also a steadily expanding city of homes, parks and boulevards. It is the winter playground of thousands of people from the North. It lies upon Tampa Bay, an arm of the Gulf of Mexico. The Hillsboro River divides the city and is spanned by bridges of concrete and steel. This bay and river afford not only water for deep sea commerce, but a place for canoeing and water sports. Up the winding course of the Hillsboro River to Sulphur Springs, from which flow 1,800,000 gallons of water per hour, tropical scenery of the rarest beauty can be seen.

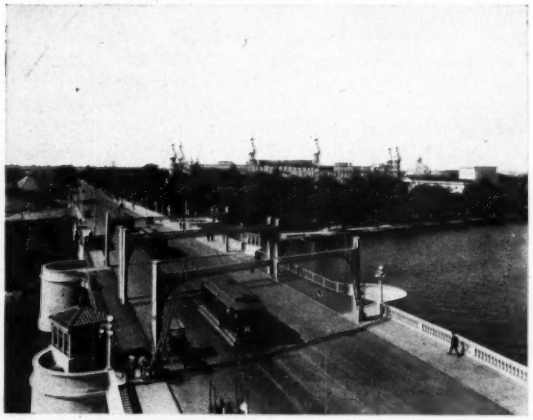
The climate of Tampa is claimed to be the most equable in the United States, without extreme changes. Fanned

Tampa is the largest manufacturing center for clear Havana cigars in the world, making nearly 300,000,000 cigars a year. At the right, cigar makers are shown working at their benches; and at the left, the interior of a packing room

by breezes from the Gulf, the summers are temperate and mild, the nights always cool and refreshing. The winter climate is delightful.

Tampa's city hall, one of the architectural ornaments of the city, cost a quarter of a million dollars

During February of each year the carnival spirit runs rife, and under the protection of his dreaded "Pirate Krewe," King Gasparilla, whose rendezvous is reported to be on Gasparilla Island, invades Tampa. Landing from his boats he forces the keys of the city from the administration, takes possession, and for three days he and his "pirate" subjects make merry. This, the crowning social event of the year, brings thousands of visitors annually to Tampa.



The new Lafayette Street bridge across the Hillsboro River, at Tampa, with the big hotel in the background

This view of the central portion of Tampa shows how the city has grown, in 25 years, from 5,000 to more than 70,000 population

THE EFFECT OF THE PANAMA CANAL ON HAWAII

Comparison of Steamship Routes via Hawaii and the Pacific Coast Ports—Advantages of Voyaging via Hawaii—Commerce and Industry of the Islands

By Lorrin A. Thurston, of Honolulu—from Advance Sheets of the History of the Panama Cana.

Illustrated by photos loaned by the Hawaiian Promotion Committee

TO Hawaii over-sea commerce, the arrival and departure of deep sea ships, is the alpha and omega of its commercial existence. Everything that it imports and everything that it exports passes by sea. Everyone who goes anywhere and everyone who comes from anywhere travels by sea.

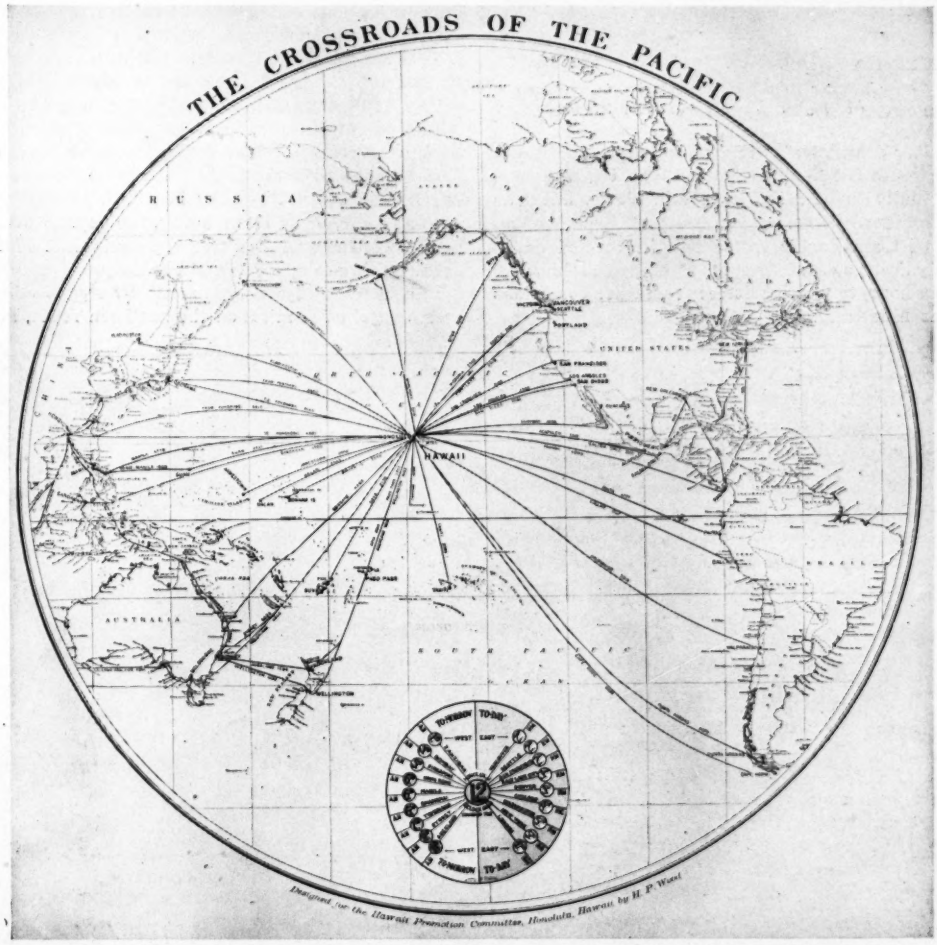
The all-important questions to Hawaii, therefore, are: What effect will the opening of the Panama Canal have on Hawaii? Will steamers operating between Panama and the Asiatic coast make Hawaii a port of call, or will they prefer ports on the Pacific coast or in Alaska?

trade wind belt. The normal wind varies from ten to twenty knots an hour.

Since white men have visited them there has been nothing in the nature of a typhoon or hurricane in the Hawaiian Islands. Even heavy gales are few and far between, and fog is not known there.

The Hawaiian Islands and the surrounding ocean are the most favored spots, climatically, on earth.

The northern route, from San Francisco, is along the Great Circle Line. Fog is prevalent there during the greater part of the year. The prevailing wind along this



Everything that Hawaii imports and exports—everyone who comes or goes—travels by sea. This chart shows Hawaii's geographic relation to the shores of the Pacific and the great highways of that vast expanse of ocean

The distances by the Great Circle Route, from Panama to Honolulu (4,685 miles) and from Honolulu to Yokohama (3,394) miles) total 8,079 miles. By the northern route it is 3,277 miles from Panama to San Francisco, and 4,536 from San Francisco to Yokohama—7,813 miles in all. The distance in favor of San Francisco, therefore, is 266 miles.

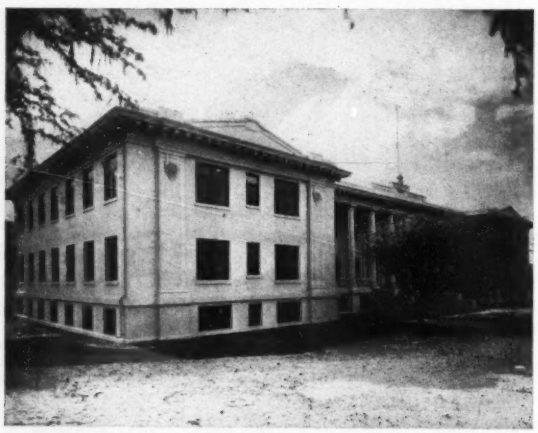
There are good reasons, however, why the bulk of the trans-Pacific Asiatic commerce will go via Honolulu instead of via San Francisco, despite this 266-miles handicap.

The southern route, via Hawaii, is in the northeast line is from the west, and, as a rule, considerably stronger than the trade winds of the southern route. Violent storms are also prevalent along this line.

The central route begins at San Francisco, but abandons the Great Circle Route and its short distance of 4,536 miles, for a course considerably to the south thereof, making a distance to Yokohama of 4,791 miles, an increase in distance of 255 miles over the northern short line route. This line is recommended by the Hydrographic Bureau at Washington to steamers crossing the Pacific from San

Francisco. The object in taking this longer route is to escape the fog, violent winds and currents and storms of the northern route. It is another demonstration that "The longest way round is the shortest way home."

A fourth route from Portland and Puget Sound parallels the second route, further north, but this route need not be considered in connection with the question at issue.



The College of Hawaii, near Honolulu, here shown, is an example of the progress of higher education in those islands

The foregoing demonstrates that although, theoretically, the northern route is 266 miles shorter than the southern, the route actually to be sailed is within eleven miles as long as the southern route.

The bulk of trans-Pacific traffic will be carried on in comparatively low-powered freight steamers, making 10 to 12 knots an hour, to which boisterous weather conditions are a serious hindrance.

A few days of heavy weather, bucking head seas and winds, and the racing of the propeller as it is pitched up out of the water, will use up far more fuel and time on the shorter rough route than will be expended on the longer but smoother route.

Stormy, rough weather is in every way detrimental to economical steaming; tends to rack, strain and otherwise injure the ship, with the possibility of wetting and otherwise injuring the cargo, regardless of what direction the wind is from. Under these conditions, other things being equal, or even against a considerable handicap, the smooth water and gentle wind route will be chosen.

The difference in a ship's progress made by an adverse or a fair wind is but little on a short voyage; but the difference in favor of 8,079 miles of fair wind by the southern route as against 7,813 miles of head wind by the northern route, or 8,068 miles by the central route, will not only nullify the theoretical 266 miles handicap, but leave a credit besides, in favor of the southern route.

The prevailing ocean current along the southern route is from east to west, while on the northern route it is from west to east, bending to the south when it reaches American shores and extending well down the Mexican coast.

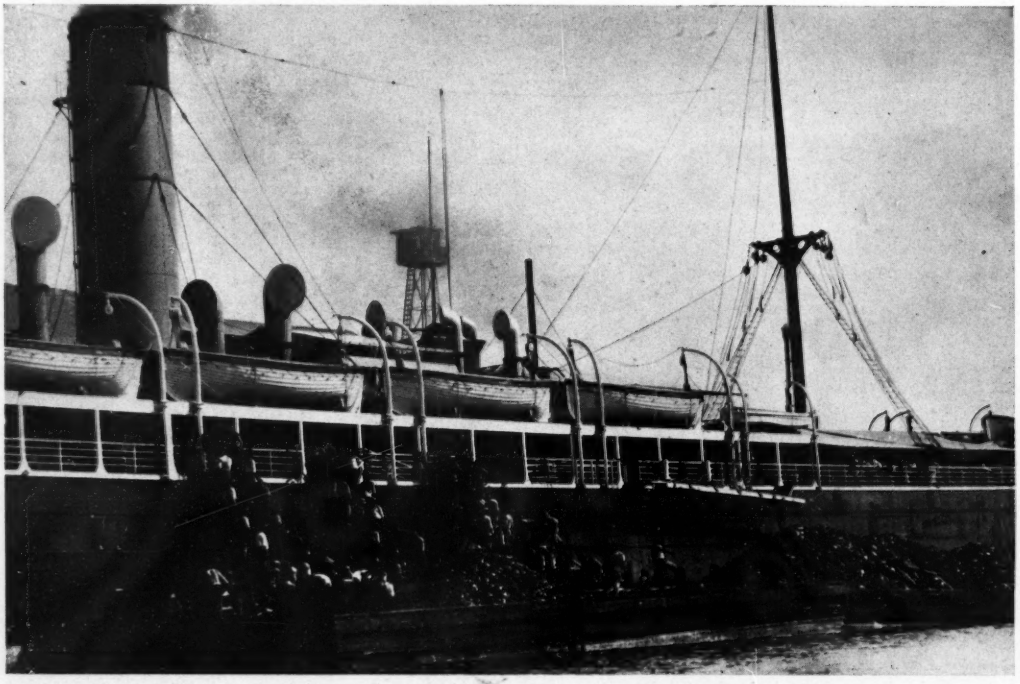
The weather bureau observations show that along the southern route the current runs westward at a speed of one-half to three knots an hour; and that on the northern route it runs to the eastward at a rate from one-half to two knots an hour.

A steamer making ten knots an hour will steam 240 miles a day; at which rate, if there were no current, favorable or unfavorable, it would take her 33 days steaming from Panama to Yokohama. With a current of one knot an hour, equal to 24 knots a day, she would gain, on a voyage of 33 days, 33 times 24 knots or a total of 792 knots.

On the northern route, if there were no current either way, other things being equal, it would take a ten-knot boat 32 days to cross from Panama to Yokohama. With an adverse current holding her back at the rate of one knot an hour, or 24 knots a day, the voyage would be prolonged 32 times 24 knots or the equivalent of 762 miles; equal to three days extra steaming.

In other words, a steamer will, by reason of a favoring current, gain 792 miles on the southern route, and by reason of adverse current, lose 768 miles by the northern route, or a total handicap, by reason of currents, of 1,560 miles in favor of the southern route as against the northern.

The type of steamer under consideration burns about 35 tons of coal a day. Six days extra steaming would, therefore, involve burning 210 more tons of coal, amounting at $8 a ton, the average San Francisco price, to $1,680



Honolulu harbor is always busy with the coming and going of ships from every corner of the globe. They stop there for coal and to take on and discharge freight and passengers before proceeding on their voyages

for extra coal alone, besides other expenses and losses easily amounting to as much more.

The variation of the tides at Hawaii is only about fifteen inches. It is only two feet in extreme spring tides. As a result there are no violent currents to be reckoned with in entering the harbor, going to or from the wharf; there is no waiting for hightide on the bar; there are no delays of any kind due to tides or currents.

There are two ports of call and supply for trans-Pacific steamers in Hawaii, viz., Hilo and Honolulu.

At Hilo the entrance to the harbor is a mile wide and 40 feet deep. There is no entering channel and no obstacle to navigation. Ships can enter and leave by day or night.

At Honolulu the entrance channel is only half a mile long and 400 feet wide, with a minimum depth of 35 feet at low water.

The channel is buoyed and lighted on both sides throughout its entire length. There are no obstacles to navigation. The harbor is entirely land locked and smooth, and the wharves are directly opposite the main entrance.

There are no navigating or climatic obstacles to prevent a vessel entering or leaving the harbor at any time of day or night.

It is submitted that, whether Hawaii is the half-way house for all of the through trans-Pacific business or not, enough has been shown above to demonstrate that it will not become the sequestered sleepy hollow of the world, but that it will get a fair share of the benefits to be derived from the tide of commerce which will, within the next two years, sweep past its shores.

Intelligent understanding of this subject requires a brief resumé of the location and conditions in the Territory.

Hawaii is not a "possession," a "colony" or a "dependency." It is a full-fledged Territory of the United States, subject to the obligations and entitled to the privileges of that status.

It is located 2,080 miles southwest of San Francisco, its nearest neighbor, and has an area of 6,649 square miles, equal to 4,127,000 acres. This area is a little larger than the States of Connecticut and Rhode Island combined, and a little smaller than the State of Massachusetts.

There are eight principal islands, extending over a distance of three hundred miles, running southeast and northwest. There are a number of small islands and reefs extending westerly for a thousand miles.

Honolulu, the capital and principal port, is located on the island of Oahu, about the middle of the group. Two active volcanoes are on the island on Hawaii, 200 miles from Honolulu.

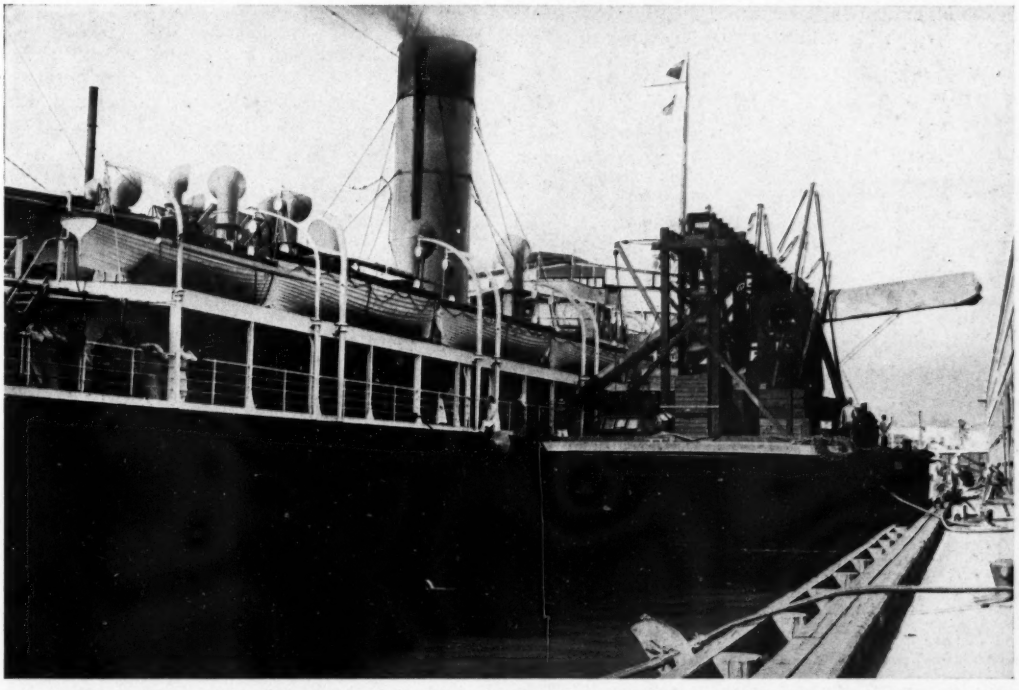
The islands are almost entirely volcanic in formation,

This illustration shows the Executive Building at Honolulu. It was the palace of Queen Liliokalani, who was deposed in 1893

being tops of mountains rising 15,000 to 20,000 feet from the bottom of the Pacific Ocean, to heights varying from 4,000 to 13,825 feet above sea level. The two highest mountains are nearly always capped with snow.

The moisture-laden winds blowing in from the warm ocean, meet the high, cool mountains, and cause excessive condensation on the windward side of the islands, resulting in heavy rainfalls and erosion of the mountains, thus creating a great number and variety of valleys, precipices, waterfalls and jagged mountain peaks; covered in places with forest and jungle, luxuriant as in any tropical country; and elsewhere contrasting with bare and barren peaks thousands of feet high, of an alpine character.

The arable land is chiefly in the valleys and along the sea coast.



The coaling facilities of Honolulu are equal to those of any port of the Pacific. From conveyor barges automatic machinery discharges the coal into the ship's bunkers at the rate of 100 tons an hour

Hawaii appeals to the stranger from many standpoints. Its grand mountain scenery; its magnificient precipices; its waterfalls, falling sheer a thousand feet into blue ocean; its awe-inspiring active volcanoes; its sea-bathing; its surf-riding; its social life and up-to-date conveniences; but after all, the one point upon which it can preeminently base its claim of superiority over every other country, is its climate.

The remarkable climatic conditions; the grand and beautiful scenery; the advanced state of the necessities and luxuries of civilized life, together with its easy acessibility, have already made Hawaii one of the Pacific's great tourist resorts.

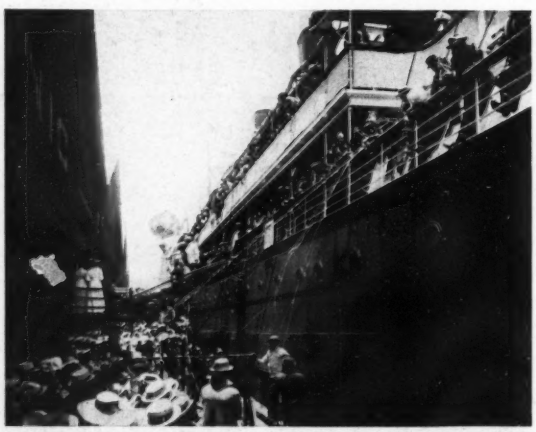
With the opening of the canal, all of the great touring steamship lines which run excursions to the Arctic, the Mediterranean and the East and West Indies will be provided with a short cut to "the Paradise of the Pacific." Hawaii will be within two weeks direct steaming of New York and three of London and Paris. A direct result should, therefore, be a radical increase in tourist travel to Hawaii. In fact, I look for care of the tourist to soon become, next to sugar production, the chief industry of the Islands.

The business life of Hawaii can be divided into three periods, viz.:

1. Prior to the execution of the Reciprocity Treaty between Hawaii and the United States, in 1875;
2. The interval between the passage of the Reciprocity Treaty and annexation to the United States, in 1898;
3. Since annexation.

The Reciprocity Treaty admitted sugar, rice and a few other Hawaiian products into the United States, free of duty. Prior thereto, Hawaii had been one of many groups of Pacific Islands doing a trading, charter and supply business with passing ships, chiefly whaling ships with a small foreign trade. Hawaii was the largest and most prosperous of these groups, differing chiefly in degree, however, from its neighbors.

With the stimulus of a guaranteed free market for its products a remarkable awakening and development took place.



No one visits Hawaii but leaves it with regret. Flower-garlanded passengers line the rails of outward bound steamers

The production of sugar for 1875 was only 12,540 tons.

The total Hawaiian imports were valued at $1,682,000 and the exports at $2,089,000, a total commerce of only $3,772,000 for the year.

In 1898 Hawaii was annexed to the United States. The production of sugar for that year had increased to 229,414 tons.

Chiefly through the growth of the sugar industry, commerce had so increased that in 1898 the imports amounted to $10,268,000, and the exports to $17,346,000, a total commerce of nearly $28,000,000 for the year.

Although the Reciprocity Treaty had thus greatly stimulated commerce, the local government was unstable, capital was timid and development retarded.

Immediately after annexation, in 1898, a marvelous expansion and increase of business took place, until in 1912, the foreign commerce of Hawaii amounted to $84,143,000.

The sugar crop for the fiscal year ending September 30, 1914, was 617,038 tons, the record crop.

The exports for the fiscal year ending June 30, 1914, amounted to $41,594,000, and the imports to $36,550,000, making a total exterior commerce of $77,144,000.

The population has increased to 227,391, including 8,373 in the army and navy, and excluding transients.

Hawaii has grown from a population of 56,000, a production of 12,000 tons of sugar and a commerce of $3,771,000, in 1875, to a population of 227,000, a production of 617,000 tons of sugar and a commerce of $77,144,000 in 1914.

One of Honolulu's principal streets. In these islands where it is always June there is none of the hurry of the North

It takes, with a few exceptions, from eighteen to twenty-four months, and, on the higher lands, as many as thirty months to make a crop, instead of a year, as is the case in almost every other sugar country, with the consequent increase of cost. All expense of upkeep and overhead charges for the longer time must come out of one crop. There are always two crops in the ground, and during several months of the year, three, all under care. The reason of this is the nature of the climate.

With the exception of certain districts, Hawaii is too dry to produce sugar cane without artificial irrigation. The cane from which over one-half of the sugar output is produced has to be irrigated every week or ten days. One-third of the employees of irrigated plantations are continuously engaged in watering the cane. The natural flow of water is insufficient for the purpose, and has to be supplemented by water pumped from wells at sea level to as high as 550 feet.

Hawaii, by the way, is the only territory acquired at the time of the Spanish War which not only pays all of its own expenses, but is a direct source of profit to the United States Government.

Since the organization of Hawaii into a territory in 1900, up to June 30, 1914, the United States Government has collected in Hawaii, as customs and internal revenue, the sum of $21,320,325. During the same period the expenditures of the Federal Government for local purposes in Hawaii, have amounted to but a small fraction of this amount, leaving a handsome net profit to the United States Government.

HORSES AND MULES FOR EXPORT

HORSES and mules constitute large exports from the United States at present. The annual average shipped abroad for several years has been 28,000 horses, average value $142, and 5,000 mules, average value $150. During the ten months ended April 30, 1915, exports of horses numbered 215,759, valued at $47,783,848, or an average of over $220 per animal, and 39,229 mules, valued at $7,478,014, or over $190 per head. As pointed out in *Commerce Reports* for February 13, 1915, these animals can readily be spared, the United States having over 24,000,000 horses and 5,000,000 mules. The big foreign demand for work animals will probably occur after the war, when they will be needed for farming.—*Commerce Reports.*

COCOANUT TREES AS WEALTH PRODUCERS

The Rapid Growth of the Copra Industry in the Islands of the Pacific

By W. D. Hornaday, of Austin, Texas—Illustrated from photos supplied by the author

IT would seem a far stretch of the imagination to conjure up a halo of romance around such everyday commodities as soap and butter. While it is true that much of the soap and butter-making business is about as prosaic as anything one could think of, there is a branch of the industry that has back of it elements of human interest and stories of romance that are probably unequalled in any other line of commercial endeavor. It is that of supplying copra for the manufacture of enormous quantities of oil which in turn is converted into cleansing cakes of soap and savory substitutes for table butter.

Much of the world-vaunted romance of the South Seas is woven about island kings and white traders and planters who are engaged in the growing of cocoanuts. When shorn of the glamor and enchantment that distance often lends, life in those far-away islands is not made up altogether of

A cocoanut grove on one of the islands in the South Seas. Many thousands of these specks of land dot the vast Pacific

lotus eating, as many who never have visited them may suppose. That there is, however, a gripping something in the balmy salt-laden air, the luxuriant greenness of the vegetation and the atmosphere of isolation that grows on one is undoubtedly true. Evidence of this fact may be found in almost every inhabited island of the South Seas. Venturesome white men go there with the original intention of remaining but a short time and are overcome by this silent power that binds them permanently to these semi-civilized homes of their adoption.

While many of the thousands of islands that dot the Pacific all the way from Hawaii to far below the equator are capable of growing a great variety of products, it is in the production of copra that their chief wealth and source of revenue lies. Cocoanut kings—men who have made enormous fortunes out of the industry—are numerous. On every boat that traverses the blue waters of the Pacific there are always one or more men who own large plantations of these valuable nut-bearing trees. They travel about from island to island, sometimes on regular steamers but usually on the smaller trading vesesls that ply between the different groups, and wherever found these island monarchs are pointed out as examples of what other men of enterprise and the proper adventurous spirit can accomplish by turning their energies to the development of the natural resources of the the coral-bound dots of land.

With the establishment of additional lines of cargo-carrying ships between many of the groups of islands and the markets of the world, the growing of cocoanuts has been greatly stimulated during the last few years. There are still, however, many of the smaller and more remote islands that are visited only at rare intervals even by the small trading vessels, and upon these little kingdoms the white plantation owner usually rules the natives like a feudal lord. In many instances the foreign protectorate of an island is in name only. Some of the islands do not see a representative of the ruling government oftener than once in five or ten years, and are not visited by a trading vessel oftener than once or twice in a twelvemonth.

The spread of the cocoanut industry has extended to some of the small low-lying coral islands which are often inhabited by only a few natives who attend to the work of gathering the cocoanuts and cutting out the meat during the long absences of the white overseer. They are virtually prisoners, but, notwithstanding their isolation, they seem to enjoy the lonesome life. Even in the Solomon and New Hebrides groups of islands, where cannibalism is still practiced, daring white men are gradually encroaching upon the wild tribes and, at the present rate of development, it will not be many years until the civilizing influences of

Cutting out the copra, the kernel of the cocoanut from which oil for making soap and butter is extra ted

the copra industry, together with the splendid work that is being accomplished by religious missionaries, will have completely conquered the aborigines and perhaps made them a part of the great general scheme of the world's commerce. It was following the opening of the Solomon Islands to settlement a few years ago that the wonderful advancement in growing cocoanuts there was begun. One copra producing concern, which has its headquarters in London, England, is now setting out 100,000 acres of cocoa-

nut palms in that group of islands. A syndicate of Australians are similarly converting more than 200,000 acres in New Caledonia and one of the islands of the New Hebrides group into cocoanut plantations. Considerable progress is also being made in growing the nuts in Hawaii and Fiji.

Some idea of the extent of the industry may be had when it is stated that the annual copra production of the South Sea Islands now exceeds 300,000 tons. The greater part of this yield is sent to London, but during the last few years quite a market for copra has been built up in the United States. Only a few years ago copra was $40 a ton. Owing to the rapidly increasing demand, however, prices have advanced materially. At the outbreak of the European war copra was selling at about $150 a ton in the London market. Many thousands of acres of cocoanuts have been planted which will come into bearing within the next two or three years.

The preparation of the dried meat of the cocoanut for market is very simple. The nuts are allowed to remain upon the trees until they are ripe. After they have fallen to the ground, they are collected into piles of about one hundred each, the natives who perform the labor making the rounds at intervals of once a month and sometimes not oftener than every two months. The laborer splits each nut open with an axe and then, with a small knife, extracts the kernel. This is the copra in its raw state. Usually the employment of the natives is by the task system. The daily task of each laborer is ordinarily fixed at splitting and cleaning 600 cocoanuts. Owing to the fact that frequent and heavy rains occur upon many of the islands, the drying process is somewhat difficult. The meat, after having been removed from the nut, is placed in bags and conveyed to movable platforms for drying. It is exposed to the sun on shallow layers of trays. If a shower comes up, these platforms are run upon rails under a roof. They are also put under shelter at night to keep off the heavy dew. It takes from three to six days to thoroughly dry the meat. The finished copra is then packed in bags and exported. One of the remarkable things about

Weaving cocoanut fibre mats is carried on out of doors and by hand labor, which is far cheaper than by machinery

drying the cocoanut meat is that none of the oil is evaporated. It does not exude, but is driven in. Only the water in the meat evaporates.

The extracting or pressing plants where the copra undergoes the final process of having its oil removed are in Europe and the United States. Enormous quantities of the oil are used in the manufacture of a cheap grade of butter that is usually sold in the London market for about 12c. per pound. Cocoanut butter is also used extensively by the European armies.

From the standpoint of revenue producing possibilities and as practically assuring a life of ease for the planter, the growing of cocoanuts is probably more attractive than that of any other branch of industry that has directly to do with the land. Not every man, however, who dreams of becoming an island king can be a cocoanut planter. It requires considerable capital to engage in the industry on a commercial scale. The price of wild land suitable for growing these palms varies from $1 to $5 per acre, depending largely upon the location of the tract. Labor, however, is remarkably cheap in all of the islands. The expenses of clearing the land of its tropical growth and keeping the plantation clear of shrubs during the period that the trees are arriving at the producing stage will run close to $100 per acre. The first crop of nuts may be expected in about six years. The yield increases gradually to the full bearing of the tree which begins at the tenth or twelfth year. From then on until the tree is 70 to 80 years old, a bountiful harvest of the nuts may be expected annually. Some of the plantations give an annual yield, when in full bearing, of three-fourths of a ton of copra to the acre, but the average yield is probably about one-third of a ton. The

Building a new house in the Fiji Islands requires neither architect nor skilled artisans—just ordinary labor

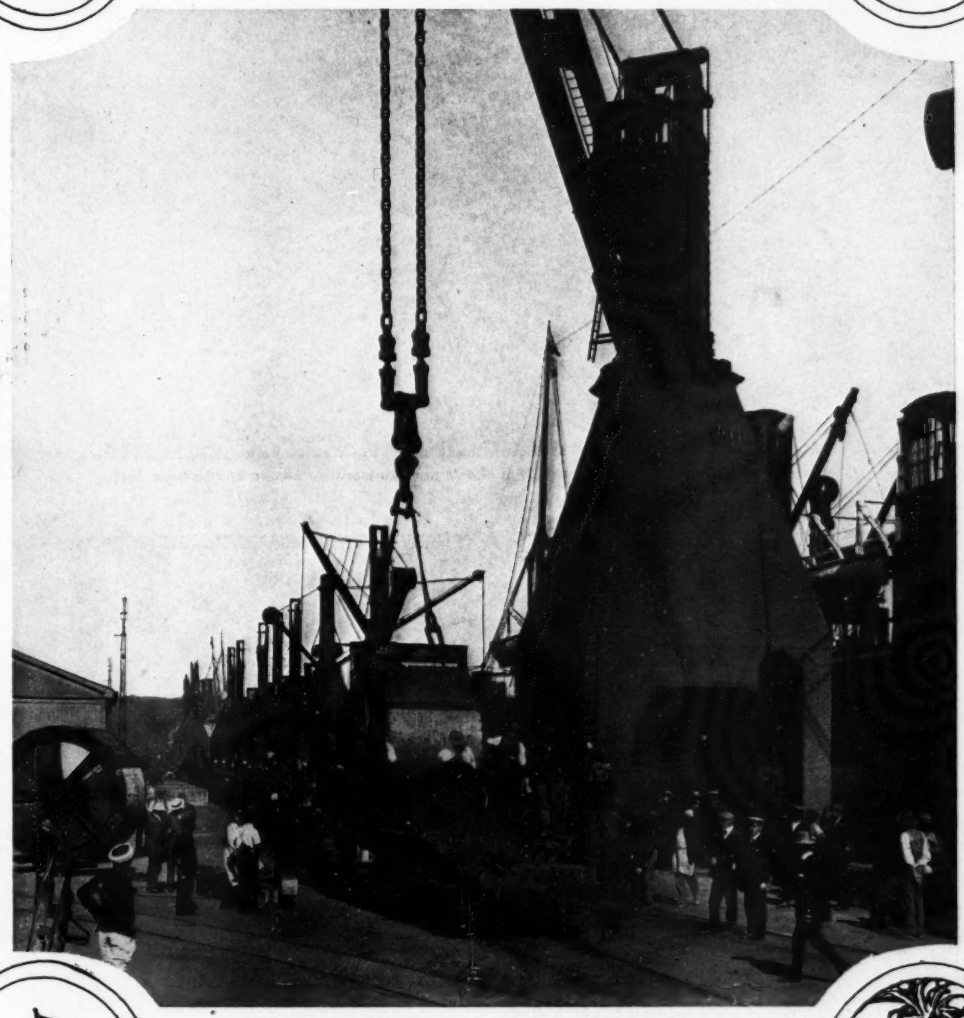
cost of operating a plantation is nominal. Native labor and other expenses do not exceed $50 per annum for each 100 acres. Many planters more than meet all plantation charges by running cattle or sheep upon the grass that grows between the trees. The smaller growers usually sell the copra on the ground to traders, the present prices being about $120 per ton. This leaves a comfortable margin between the local and the London markets.

Besides its value as a producer of copra, the cocoanut tree provides many of the necessaries of life for the island natives. The full-grown trees are 60 to 90 feet high. The trunks are used for the timbers of dwellings and other buildings, the plaited leaves for thatching the roofs of houses and to cover the outer walls; the logs are often used in bridging brooks and rivers; the fibre of the husk of the nuts is made into twine which is called sinnet and this, in turn, is woven into beautiful mats and various other articles of household use. The oil is used for cooking, for making puddings, for lighting houses and for anointing the body. The shells of the nuts are often converted into drinking cups and water pots. The universal drink among the natives is the milk of the young cocoanut. Out of the soft central part of the head of the cocoanut palm a delicious salad is made.

It was the lure of the cocoanut that attracted many Americans and other white traders to the far distant islands in the early days, and it is largely through the contact of these venturesome seafarers that civilization has been brought to many of the people of Polynesia and Malaynesia.

Well-kept cocoanut plantations present a beautiful picture to the eye. While the trees are not always stately and symmetrical, the scene is not without its attractive setting. Scattered here and there under the towering tufts of leaves that serve the part of branches of the tree are the picturesque homes of the natives. Often bordering the finished plantations is a perfect jungle of wild vegetation which densely covers rich land that is awaiting man's conquest.

Scenes OF WORLD-WIDE INTEREST



Heavy electrical machinery for the Johannesburg municipality being loaded on platform railway cars at Port Natal. Durban—as the city is also called—is in close proximity to the harbor on Port Natal Bay and is connected by rail with Maritzburg, Ladysmith, Johannesburg, Pretoria, Kimberly and other important centers in South Africa. The railroad systems have grown rapidly in the last ten years and now link the principal cities of the interior with the seaports, through which the products of the South African Union are exported to all parts of the world

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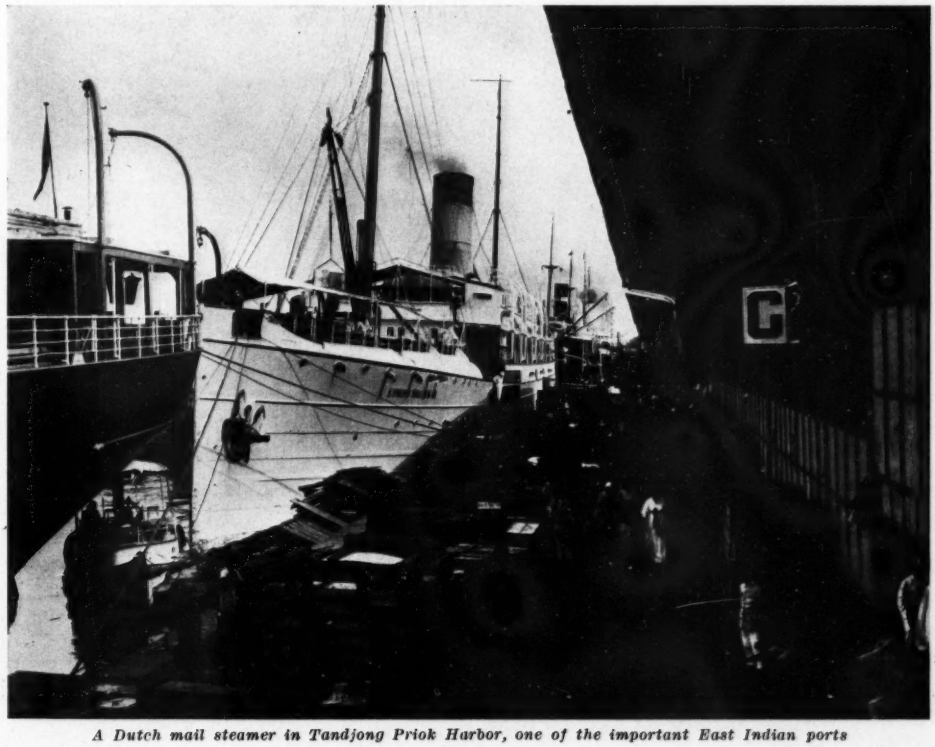
[The illustrations on pages 50 and 51, are from photos loaned by the Indian Trading Company, Rotterdam and Soerabaya]

Java produces much sugar. The illustration shows natives working in one of the cane fields

The luxuriant growth of the sugar cane in Java and the methods of transportation to the mill are here shown

Opening cocoa pods. Cocoa is one of the principal products of the Dutch East Indies

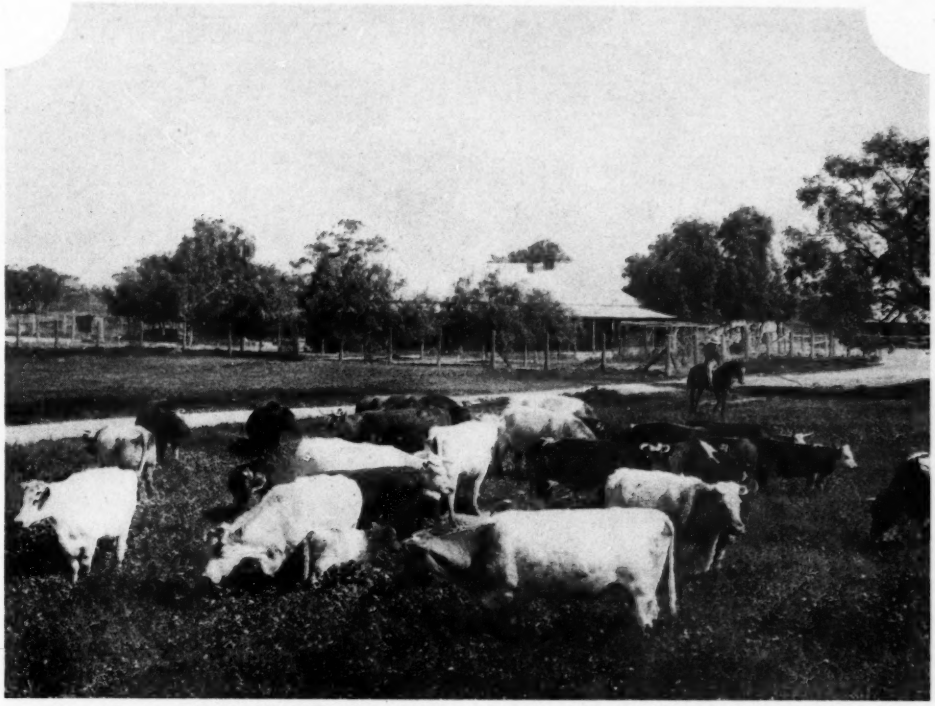


A Dutch mail steamer in Tandjong Priok Harbor, one of the important East Indian ports

Photos by George Bell, Sydney, N. S. W.

Combined harvester at work, Coolamon, N. S. W., one of the great Australian grain belts

Hauling logs from the forests on the mountain slopes of the north coast of Australia



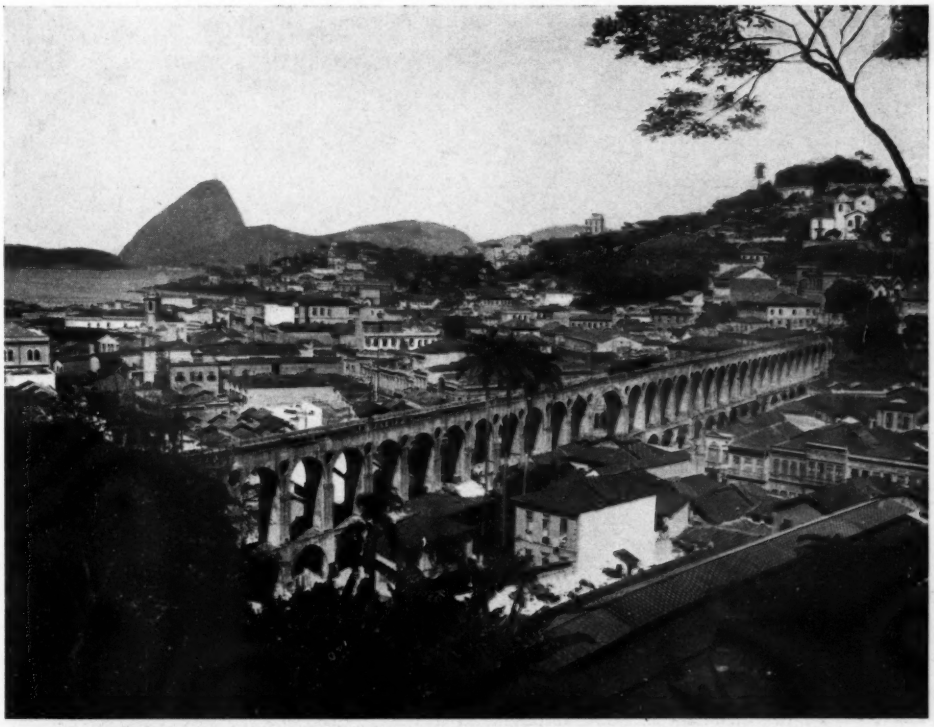
Tycannah Station, N. S. W. Great cattle ranches are a feature of this part of Australia

Merino stud rams at waterhole, Burrawang Station, Forbes, N. S. W., Australia

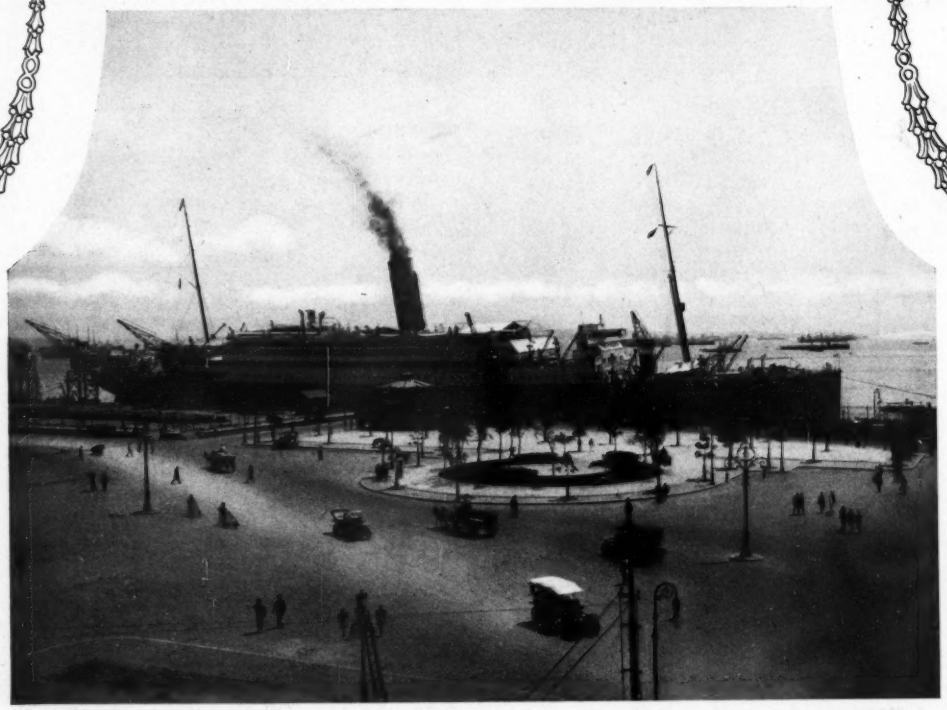
Loading wheat at railway station, Coolamon, N. S. W., a great grain shipping point

Steamers at Darling Harbor, Australia, a port through which passes much agricultural freight

Rua da Assembléa is one of Rio de Janeiro's important commercial thoroughfares



The Carioca acqueduct is one of the picturesque features in this suburb of Rio de Janeiro



Praça Maua (landing quay) in the harbor of Rio de Janeiro, the capital and metropolis of Brazil

Praça Quinze de Novembro, Rio de Janeiro, Brazil

THE WORLD-WIDE QUEST FOR TRADE

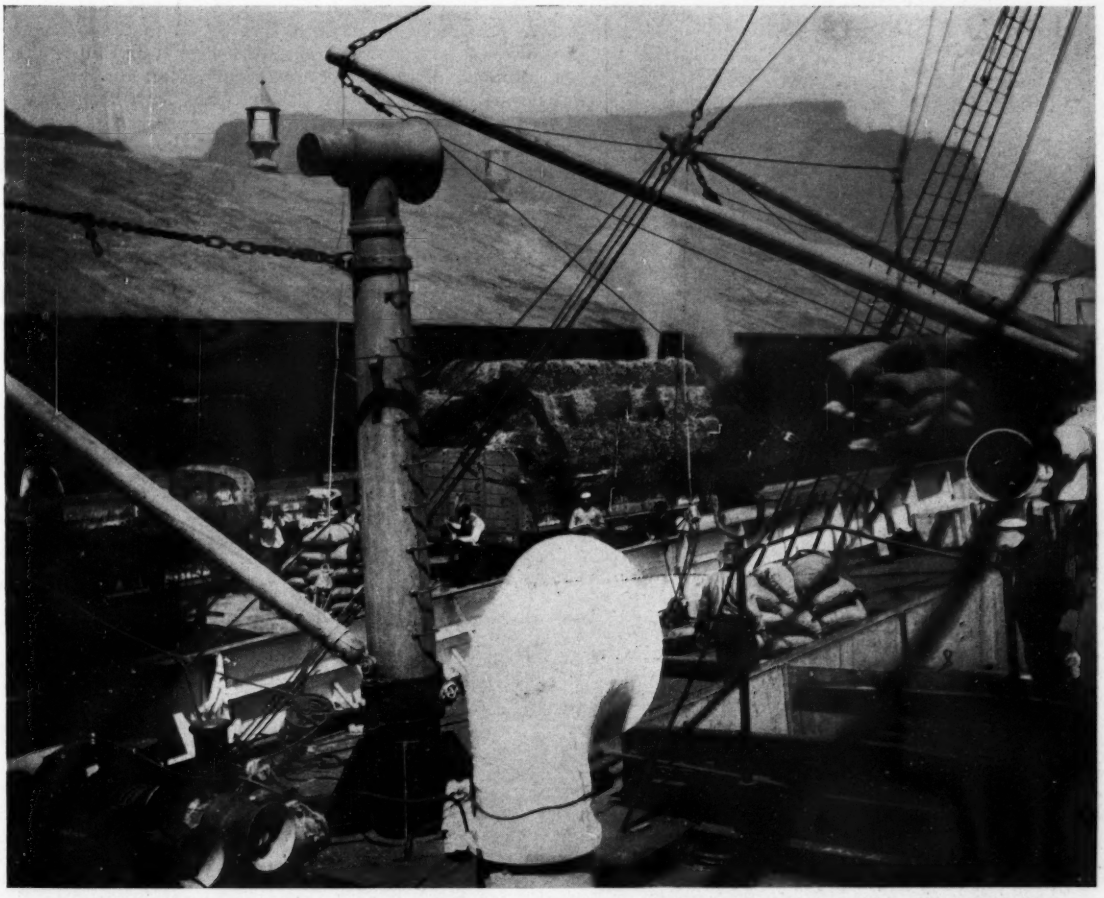
The Markets of the Globe are being Canvassed To-Day Even More Diligently than they were in Times of Peace

ONE of the first world-wide effects of the great war was the stimulation of home industries in every country. This was a necessity, owing to the general disorganization of international commerce and finance and the consequent cutting off of many sources of supply. In the first months of the war the tendency among many nations, outside of those in whose territories battles were being fought, was to establish new industries so that the volume of necessary imports might be reduced to a minimum. If this idea of industrial independence had been carried to an extreme, it would have resulted in a reversion to the commercial conditions that prevailed in the walled cities of centuries ago.

This article is not intended to be a complete summary of all the various activities in this direction. It seeks to present, however, a general view of the world-field, with typical indications, here and there, of what is being done.

In the United States, the Department of Commerce, has been particularly active in the collection and dissemination of a vast amount of valuable information gathered by its agents all over the world. The Pan-American Conference, held in Washington last May, brought the countries of the Western Hemisphere into closer touch than ever before. Civic bodies and private enterprises are also seeking foreign trade very actively.

The Export Association of Canada, one of the recent



Courtesy A. H. Tatlow, Publicity Dept., S. A. R'ways.

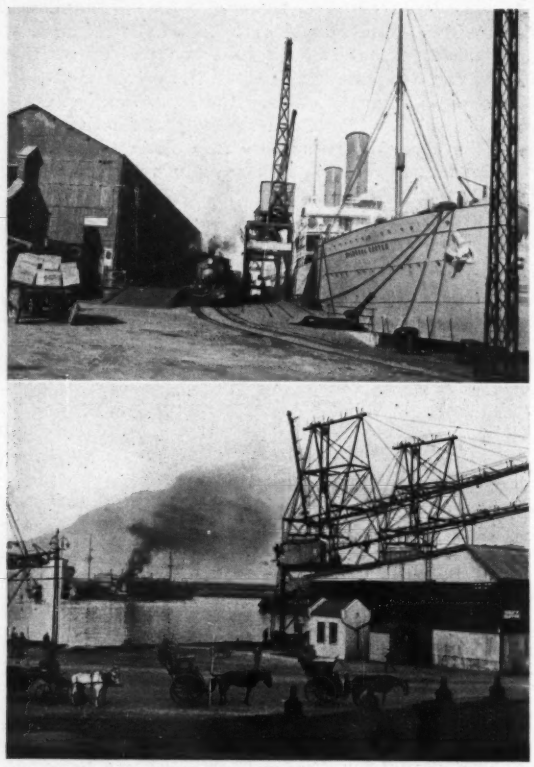
Loading grain and forage on board steamer at Cape Town, South Africa. Instead of being diminished by the war, ocean traffic in many ports has been greatly increased

Presently, however, international commerce began to be resumed on a larger and larger scale. Governments and individuals realized that before the war ended and normal conditions again prevailed, the pattern of the fabric of over-sea trade was likely to be changed materially. Therefore every commercial nation began and has continued to do its utmost, under the circumstances, to retain or increase the trade it formerly enjoyed. This has resulted in the formation of many new commercial organizations, and the sending forth of trade commissioners or representatives by Governments and by private enterprises. Consequently the world's markets are being canvassed quite as diligently to-day as they ever have been —if not more so.

organizations in the Dominion, is working to secure for Canada a new and larger portion of the world's trade, and to develop and carry on the export business in Canadian products on national co-operative lines. Similar associations, chambers of commerce and individual manufacturers and wholesalers are also systematically engaged in building up markets abroad for Canadian products.

The British Government has a highly organized and widely developed system for the promotion of its overseas trade. Its center is the Board of Trade in London. The Intelligence Branch of the Commercial Department of this body collects, classifies and disseminates a vast amount of information on all subjects of commercial interest. As far as possible, this branch supplies, on per-

sonal or written application, information with regard to: Foreign and colonial contracts open to tender, and other openings for British trade; lists of firms abroad engaged in particular lines of business in different localities; foreign and colonial tariffs and customs regulations; commercial statistics; forms of certificates of origin; regulations concerning commercial travelers; sources of supply, prices, etc., of trade products; shipping and transport, etc. Samples of foreign and competitive goods and commercial



Two views of the Cape Town docks, the upper showing a Castle Liner loading, the lower modern coaling appliances

products which are received from time to time are exhibited at the offices of this branch. The *Board of Trade Journal*, which is published weekly, is the principal medium through which the intelligence intended for general information is conveyed to the public.

For many years British traders have been going to the famous Leipzig Fair in Germany, and it has been urged that a similar fair should be held annually in England. The first effort in this direction was the British Industries Fair, which was held in the Royal Agricultural Hall, in London, May 10-21.

This fair was purposely limited to toys and games, earthenware and china, glass, fancy goods, cutlery, electroplate, clocks, jewelry and stationery and printing. The general public was not admitted, the visitors being confined to bona fide buyers for British domestic and overseas markets.

Notwithstanding the war and its special demands, British manufacturers are making great efforts to promote their export trade after the end of the war. It is reported that a French steamer will soon sail on a commercial journey from Southampton for South America, with 100 representatives of British manufacturing industries, and 50 French merchants and traders. The vessel will carry numerous samples of manufactured goods, and will call at the principal South American ports, where the travelers will study trade conditions and get into personal touch with importers.

Chambers of commerce established in certain foreign countries in the interest of British trade are found in many parts of the world. The principal ones are in Buenos Aires, Argentina; Hankow, China; Alexandria, Egypt; Paris, France; Genoa, Italy; Bushire and Mohammerah, Persia; Lisbon, Portugal; Petrograd, Odessa and Warsaw, Russia; Cape Town, South Africa; Barcelona and Madrid, Spain; Tunis; and Athens, Greece, for that country and the Balkan States.

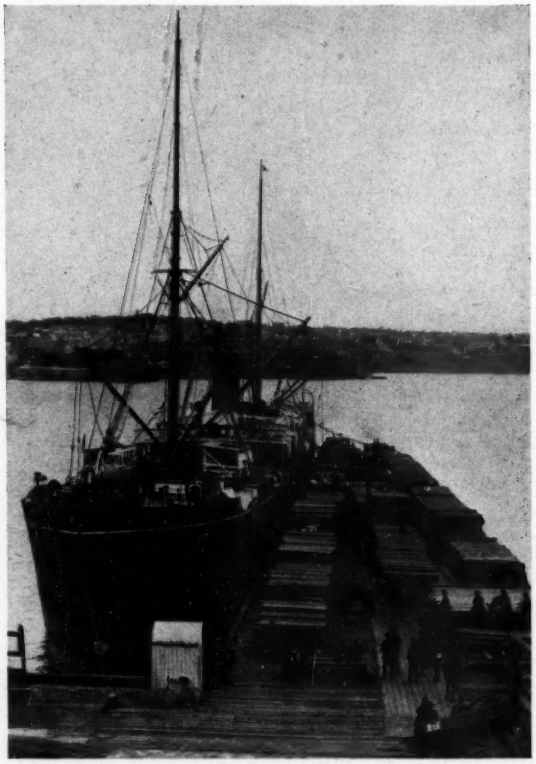
Nearly every one of these British chambers of commerce has branch offices, and the majority of these organizations issue periodically a journal or annual report.

The American Chamber of Commerce in Paris (an account of which appeared in the April, 1915, number of the INTERNATIONAL REVIEW), is devoted to promoting commercial relations between France and the United States. In the same issue of the REVIEW appeared an account of the newly organized American Chamber of Commerce in Milan, Italy, which was established February 1, 1915, and is expected to prove exceedingly helpful to the steadily growing trade between Italy and the United States.

Numerous steps have been taken by private commercial organizations, by semi-public bodies, and by the French Government to develop trade between France and Russia. The Minister of Foreign Affairs recently appointed a commission to make a general study of the subject.

A new society has been established in Petrograd to promote friendly relations between Russia and the United States and Canada. The society will collect and distribute information about Russia for Americans, and about America for Russians.

The Russian-American Chamber of Commerce, of Moscow, was organized in May, 1913. It issues a monthly journal in Russian and English. The object of the society is to bring the commercial and industrial interests of the two countries into closer touch with each other.



Loading railway sleepers for export in the harbor of Sydney, New South Wales

In March, 1911, the American Chamber of Commerce for the Levant was organized for the purpose of extending American trade relations in the Near East. Branches have since been established at Salonika and Patras, in Greece, and at Smyrna in Asiatic Turkey.

A commissioner sent by the Spanish Government visited the United States in May and June for the purpose of studying and promoting Hispano-American trade. The Commissioner brought with him samples of Spanish prod-

ucts, and made a careful study of various branches of the manufacturing industry during his stay in America.

Prominent Spanish merchants founded a Spanish Chamber of Commerce in New York City in October, 1913. Arrangements are being made for co-operation between this organization and the American Bureau of Foreign and Domestic Commerce with the view of increasing trade between the two countries represented and establishing closer relations between commercial organizations and private business enterprises in America and Spain.

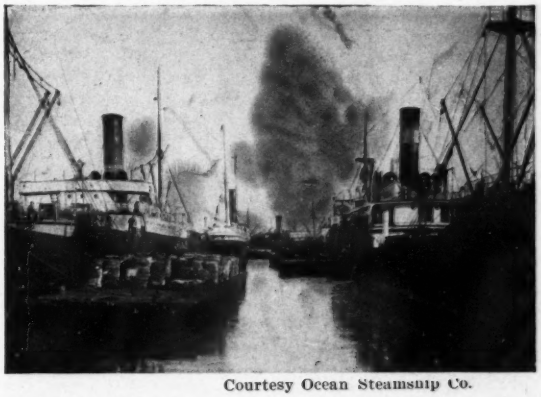
A chamber of commerce is being organized in Panama by some of the prominent American bankers and merchants in that city. The management is to be under control of a board of governors, and a set of by-laws has been drawn up for approval.

The official mission which the French Government sent to South America began its work at Rio de Janeiro early in April. It consists of diplomats, bankers, representatives of boards of trade, experts in metallurgy and in marine affairs, and journalists. The party is headed by M. Pierre Baudin, a former minister of marine and senator of France. The mission's purpose is to attempt to strengthen the bond of commercial amity, not only between France and Brazil, but also with Uruguay, Argentina and Chile. French influence in Brazil has been chiefly in the field of banking, although that country has considerable investments in the railroads of southern Brazil, docks at Rio Janeiro, refrigerating plants, etc.

A number of British subjects met in Montevideo recently to organize a British Chamber of Commerce of Uruguay. The meeting was attended by practically all the members of the British community in that country. An executive council, composed of 21 members, was formed. This council will appoint an executive committee of seven, and a number of sub-committees to deal with specific branches of business and industry.

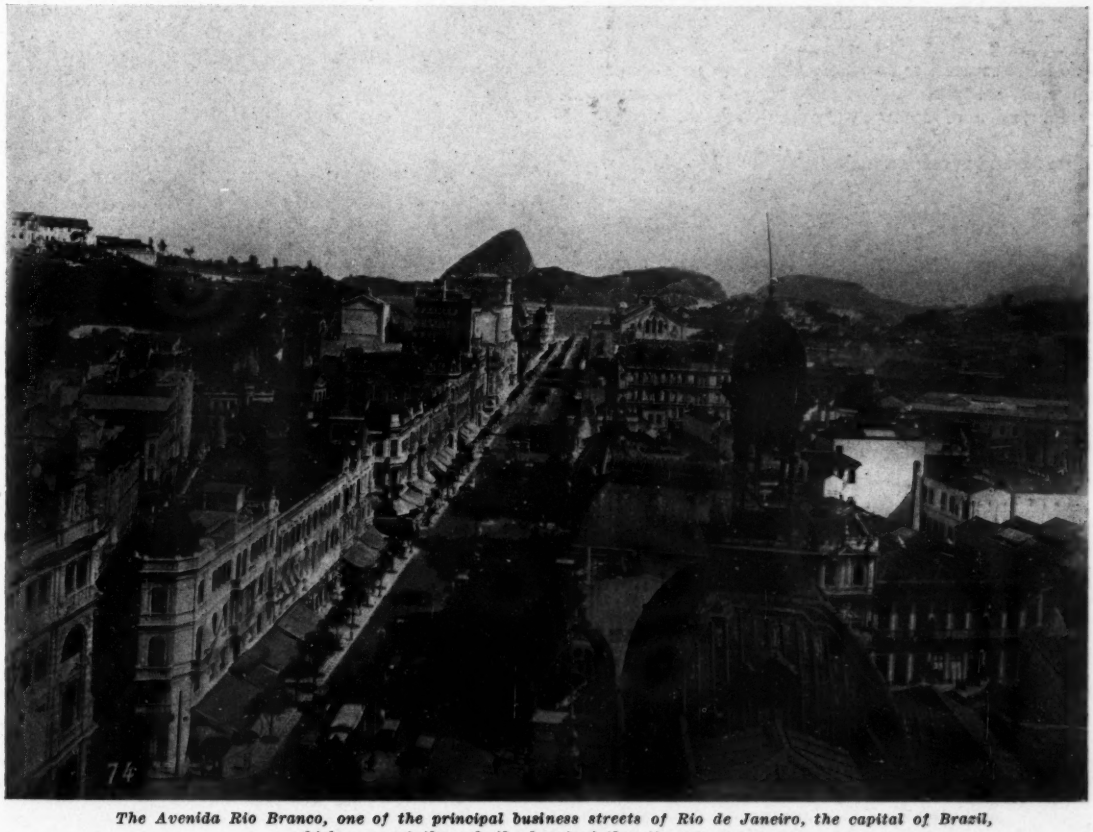
Courtesy Senhor Mario S. Thiago

A hardware, paint and crockery store at Guaratingueta, State of São Paulo, Brazil



Courtesy Ocean Steamship Co.

Cotton being loaded for export at Savannah, Ga., where $1,000,000 are being expended in new ocean terminals



The Avenida Rio Branco, one of the principal business streets of Rio de Janeiro, the capital of Brazil, which was cut through the heart of the city some years ago

A private trading company at London is organizing a commercial trip to South America by representatives of British and French manufacturers. The first port of call will be Caracas, Venezuela. The steamer carrying the party will touch at Bahia, Rio de Janeiro and Santos. Proceeding southward, the ports of Buenos Aires and Montevideo will be visited. The steamer will then proceed through the Straits of Magellan and on its voyage up the west

Imperial Theatre and Board of Metropolitan Police, Tokio, Japan

coast will stop at Valparaiso and Antofogasta, in Chile. In Peru, Lima will be visited, and the homeward journey will be continued to Baranquilla through the Panama Canal, with a side trip, time permitting, to Bogotá. A similar expedition of North American business men recently completed a tour of South American centers in the *Kroonland.*

The excess of imports over exports, recurring each year and creating an unfavorable balance of trade, is a matter of no little concern to Japanese statesmen and economists. To remedy this situation is one of the principal reasons for the formation of so many foreign-trade-seeking organizations.

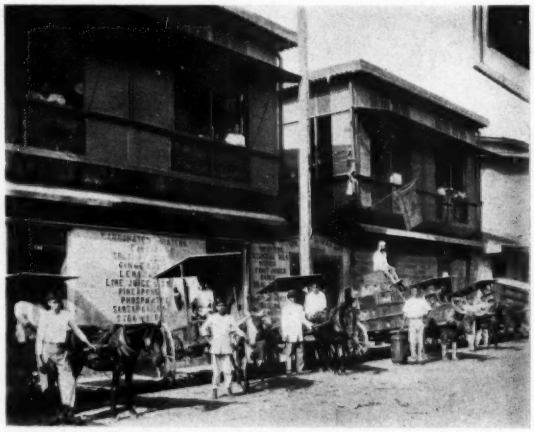
Two Japanese commercial envoys have been in Australia lately and are now reported to be visiting New Zealand's business centers with a view of establishing trade relations. It is said that Dr. Jissell Misura will remain in Sydney as a special trade commissioner for Japan, with several others under his direction, and that one and probably two Japanese commissioners will be located in the dominion of New Zealand to promote export trade there.

The Japanese Government, in order to extend that country's market for its manufactures, is sending its commissioners to different parts of the world. One has been sent to Canada and the United States, and two each to India and China. Four or five business men accompany the official representatives of the Government, in each case.

It is proposed to establish a Russo-Japanese Chamber of Commerce in Harbin. It is to become affiliated with the Russian Trade and Industry Union, with headquarters at Moscow, which was organized at the end of last year. This body is intended to deal with all questions that practically touch the commercial and economic future of Russia.

At present Russians are visiting Japan obtaining samples, prices and other particulars of goods for which there are inquiries in Russia. The Japanese are sending commercial representatives all over Russia to inquire into present conditions and requirements and to offer goods of Japanese manufacture. It is expected that the establishment of the chamber of commerce in Harbin will considerably facilitate the interchanging of views of traders of both nationalities.

An association has recently been established in Japan for the encouragement of home industries. Its membership includes nearly all the leading business men of the Empire. The general objects of the association are: The encouragement of domestic production, the increased use of Japanese products, and the extension of their sales abroad. In order to attain these objects the society will undertake researches on questions pertaining to domestic production; the establishment of societies for the exhibition and advertising of goods; the answering of questions relating to domestic production; the collection of catalogues; and the publication of reports.



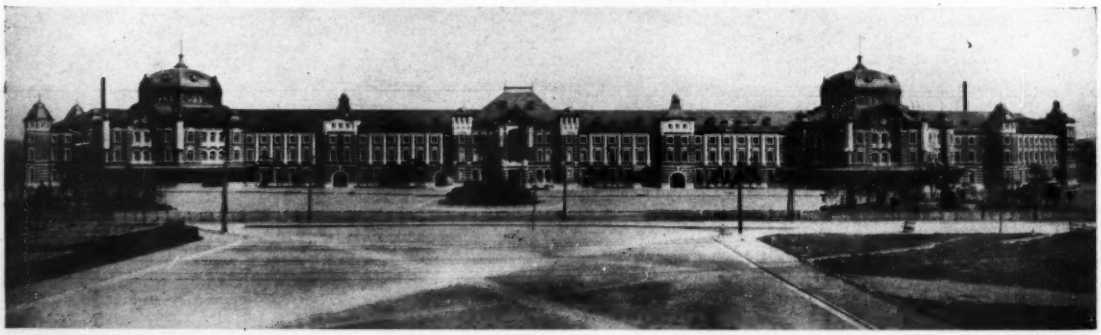
Courtesy of Watson & Watson, Manila.

Head office and warehouse of a firm of manufacturers, exporters and importers at Manila, P. I.

A plan for a commercial museum in Yokohama has been drawn up by the Yokohama municipal authorities and an appropriation of $150,000 is proposed. The museum will contain samples of all articles exported and imported by Yokohama. There are 40 commercial and industrial museums in Japan, and Yokohama is the only large city which has no institution of this kind.

The Honorary Commercial Commissioners of the Republic of China arrived in San Francisco May 3 and returned to that city, homeward bound, July 8, after making an extended tour of the United States and Canada. An account of the personnel and objects of this commission was given in the July number of the INTERNATIONAL REVIEW.

Station of the Imperial Japanese Government Railways at Tokio. The administration of this great system is now making exceptional efforts to provide information for tourists and business men visiting Japan



INTERNATIONAL TRADE CONDITIONS

PORTO RICO'S TRADE AND INDUSTRIES

A Comprehensive Survey of Conditions in this Rich and Busy Island Possession

By H. F. Kupfer, Manager San Juan Office of R. G. DUN & Co.

PORTO RICO is the fourth largest of the islands composing the West Indies, but stands second in trade importance. Considering its size, it excels commercially even any of the larger islands. As it forms part of the United States, its trade relations with the latter are not affected by import duties, and consequently an important exchange of commodities has developed. The following official figures as to imports from and exports to other countries, will show the growth of this development:

Value of goods shipped to United States for 1900, and 1910 to 1914: 1900, $3,350,577; 1910, $32,095,645; 1911, $34,765,409; 1912, $42,873,401; 1913, $40,538,623; 1914, $34,423,180.

Value of goods shipped to foreign countries for 1900, and 1910 to 1914; 1900, $3,261,922; 1910, $5,864,574; 1911, $5,152,958; 1912, $6,832,012; 1913, $8,564,942; 1914, $8,679,582.

Value of merchandise brought into Porto Rico from the United States for 1900, and 1910 to 1914: 1900, $6,952,114; 1910, $27,097,654; 1911, $34,671,958; 1912, $38,470,963; 1913, $33,155,005; 1914, $32,568,368.

Value of merchandise brought into Porto Rico from foreign countires: 1900, $3,037,391; 1910, $3,537,201; 1911, $4,115,039; 1912, $4,501,928; 1913, $3,745,057; 1914, $3,838,419.

The principal city and seat of the Insular Government is San Juan, with some 48,716 * inhabitants, located on the northern shore of the island. The second town of importance is Ponce, with 35,027 * inhabitants, on the southern shore, and the third is Mayaguez, with 16,939 * inhabitants, on the western shore. These are also the principal ports and centers of distribution for imports. In addition there are some four other ports of lesser importance, together with the docking facilities maintained by various sugar centrals located near the coast. The various ports, and especially the principal ones, are well equipped for the handling of cargoes, large sums of money having been expended for dredging, piers and concrete bulkheads, which with other improvements are keeping step with the requirements. Lately, also, large storage facilities for oil have been provided at Ponce, and are planned for San Juan, to supply fuel economically for oil-burning steamers.

Various steamship lines maintain regular schedules between Porto Rico and New York and New Orleans, and a new merchants' line is planned. In addition a Cuban line has regular sailings, and normally several European steamship lines touch at San Juan and other ports, though some are now practically limited to Spanish companies.

Railroad transportation on the island is practically limited to the American Railroad, which line runs westerly from San Juan, following the coast. Its present terminus is at Guayama, which is due south from San Juan on the other side of the island. There is also a railroad from San Juan to Caguas, in the middle of the island, and various short lines maintained by sugar centrals in connection with the requirements of their properties. However, there are excellent wagon roads all over the island, and any point is easily reached by automobile at relatively small expense.

Banking facilities offered are ample and several of the banks with offices in San Juan maintain branches at Aguadilla, Arecibo, Mayaguez, Ponce and Humacao. Another with headquarters at Ponce, has branches at Yauco and Guayama. There are in all three Porto Rican banks, one American bank and branches of two Canadian institutions. Aside from the above there are various private firms conducting banking departments in connection with their business.

The principal products of Porto Rico are sugar, tobacco, coffee and tropical fruits.

Of these, sugar is by far the most important and largely determines the prosperity of the island. Sugar cane is chiefly raised in the low-lying districts forming a belt along the entire coast, which is widest on the northern side of the island. The cane is raised on lands owned or leased by the large sugar companies, and by individual planters who contract their crops to the nearest sugar central and are generally financed by the latter until crop time.

The total production of raw sugar for the last few years was as follows: 1909, 277,092 tons; 1910, 346,785 tons; 1911, 349,840 tons; 1912, 371,075 tons; 1913, 398,003 tons; 1914, 351,665 tons.

No refined sugar is produced here and practically the entire output of raw sugar is shipped to the United States. The manufacture is chiefly done by some forty centrals, and one-third of the total production is handled by six centrals, one of the latter alone producing over 60,000 tons of 2,000 pounds per year. In addition there is a considerable amount of alcohol and molasses produced, the former being almost entirely consumed here in the manufacture of rum, etc., the latter being exported to the United States. The yearly export of molasses amounts to some 15,000,000 gallons. The principal ports of shipment for sugar and molasses are San Juan, Arecibo, Mayaguez, Arroyo and Fajardo, though considerable quantities are also forwarded direct from the large centrals which have docking facilities of their own.

* Census of 1910.

SUMMARY OF THE BUSINESS SITUATION IN PORTO RICO

EXPORT STAPLES

SUGAR.—1915 crop small; 1916 probably larger; prices good. Industry prosperous.

TOBACCO.—1915 crop below average; prices satisfactory. Reduced planting for 1916 expected. Condition of industry sound.

FRUITS AND COCOANUTS.—Exports normal; prices good. Industry expanding steadily.

COFFEE.—1914 crop larger; prices and exports normal. 1915 crop reduced in all grades. Condition of industry satisfactory.

IMPORT TRADE.

DRY GOODS.—Stocks on hand large; imports light; conditions improving gradually, but collections are slow and credits restricted for the time being.

PROVISIONS.—Imports nearly normal, but recovery from former depression is slow and credits require caution.

OTHER STAPLE LINES.—Similar conditions also exist in all branches of miscellaneous manufactures imported.

OUTLOOK.—While complete confidence has not yet been restored, the general feeling is improving, but trade will continue to be below normal for some time.

The violent changes in the sugar market have always largely influenced production here. The high prices prevailing in 1913 were responsible for a considerable increase in the area planted with cane, but as prices declined heavily in the first half of 1914, much of the cane could not profitably be milled and planters as well as sugar companies sustained large losses. Their floating indebtedness consequently increased to such an extent that the sugar industry was confronted by seemingly unavoidable disaster. However, the political developments in Europe in August, 1914, caused a sharp rise in sugar and for some time quite unprecedented prices prevailed. The immediate benefit to the industry here, though, was comparatively small, as there were no large stocks on hand. Owing to the previous decline, planting of cane had been considerably restricted and the crop for the grinding season of 1915, which practically ends in the month of June, was small. The crop was also further affected through unfavorable weather conditions. The high quotations in the fall of 1914 were not maintained, though during 1915 good prices were obtained, leaving substantial profits and practically removing the danger of the financial crisis previously feared.

The crop which will be milled for 1916 promises to be large, and as it is expected that sugar will command good prices for at least another year, owing to the large decline in the production of beet sugar, the sugar industry of Porto Rico will be able to place itself upon a solid financial basis. However, if the present tariff law of the United States, placing sugar on the free list by March, 1916, goes into effect, the sugar producers and the whole island will be more or less seriously affected, as the tariff has protected Porto Rico against countries which produce cane sugar under more advantageous conditions.

Tobacco is grown practically on the entire island, though chiefly in the central districts, Caguas, Cayey, Aibonito and Comerio being the most important of these. The total production is considerable, though the area planted varies according to the condition of the market. A large production is also raised under cover. The crop for 1915 was smaller than in previous years, though prices were generally satisfactory, especially for the cheaper grades of filler tobacco, for which there was a good demand. Most of the tobacco produced is shipped to the United States, partly raw and partly manufactured. The following figures will show quantities and values for the last fiscal years:

	1914		1913	
To the U. S.	Quantity.	Value.	Quantity.	Value.
Unmanufactured, lbs.	7,534,212	$3,104,151	8,149,465	$3,148,098
Cigars & Cigarettes, M.	166,800	5,608,829	M. 173,966	5,823,485
To Foreign Countries.				
Unmanufactured, lbs.	2,936,263	$244,996	387,311	$40,139
Cigars & Cigarettes, M.	948	4,671	M. 59	545

Shipments are chiefly made through San Juan.

The shipments for 1914-15 will come below the above figures, as prevailing economic conditions in the United States have caused a considerable falling off in demand, though an improvement has been noted for the last two months and shipments of manufactured tobacco are now about 75 per cent. of normal. There are, however, large stocks of raw tobacco on hand and it is expected that the acreage to be placed under cultivation next November will be considerably less than before.

Fruits are produced and shipped from Porto Rico in considerable quantities. The systematic exploitation commenced immediately after the American occupation in 1898. Before then there existed no regular export, though Porto Rico was known to produce various tropical fruits indigenous to its soil, such as pineapples, oranges, limes, etc. Since 1898 cultivation has developed considerably, but there still remain almost unlimited opportunities for further expansion. The development of the fruit industry is not only due to the ideal climatic conditions, but to the advantage of having in the United States an unlimited market unrestricted through import duties. The low freight rate to New York, which is about one-third of the rate paid for the same products from Florida, has been another important factor.

The principal fruit growing districts lie on the north coast between Arecibo on the west and Carolina on the east and south as far as the mountain range, the entire length of the island. In addition there are some stretches of land around Ponce, where oranges thrive and are grown in large quantities.

The fruit industry is chiefly in the hands of Americans. It is partly carried on by individual planters and partly by corporations. Fruit plantations range in size from a few acres to 300 to 500 acres, though medium-sized plantations prevail. An important factor is that plantations have been comparatively free from insect pests.

The principal fruits are pineapples, grapefruit, lemons and oranges. Bananas also thrive well, though are not exploited for shipment out of this island. The principal shipping season for pineapples is from April to June, and grapefruit from November to March.

The crop of 1915 is considered an average one, though grapefruit was affected in the beginning of the season by unfavorable market conditions in the United States. Latterly a considerable improvement was noted, but shipments this year remained below previous figures.

Pineapples obtained good prices for 1915, shipments were large and yielded handsome profits to growers. Oranges, lemons and limes commanded their usual good market, a considerable amount being shipped, as in previous years, from Ponce and Mayaguez.

Several co-operative associations among growers facilitate shipments, and maintain offices for distribution in the United States.

Mention should also be made of the exploitation of cocoanuts. Cocoa palms abound all over this island, and the yearly production of cocoanuts is very large. The principal points of shipments are San Juan, Ponce and Mayaguez, and nuts are shipped with the outer husk removed. They are gathered at various central points along the coast from individually-owned smaller and larger groves, partly leased and partly under contract as to production extending over one or several years. Latterly, experiments have also been carried on for the utilization of the fiber contained in the outer husk, which formerly was considered as waste of little value.

The following figures will give some idea as to the importance and growth of the fruit industry:

FRUITS (PRINCIPAL) AND NUTS SHIPPED TO THE UNITED STATES.

1914.	Quantity.	Value.
Oranges, boxes	348,870	$752,088
Pineapples, crates	369,763	1,245,215
Pineapples (canned), boxes	65,159	175,534
Grapefruit, boxes	206,200	751,769
Cocoanuts, thousands	11,237	442,352
1913.	**Quantity.**	**Value.**
Oranges, boxes	353,633	$740,010
Pineapples, crates	360,232	1,142,007
Pineapples (canned), boxes	52,144	147,564
Grapefruit, boxes	216,216	726,687
Cocoanuts, thousands	10,797	348,619

The total values of fruits exported for 1901, and from 1910 to 1914 are as follows: 1901, $109,801; 1910, $1,635,817; 1911, $2,073,933; 1912, $2,377,762; 1913, $3,120,919; 1914, $3,400,903.

Coffee has always been produced in Porto Rico in ever increasing quantities, but exported chiefly to Europe, where the flavor of Porto Rican coffee appears to be more appreciated and a better price is secured. Prevailing conditions in Europe affected the coffee industry here quite seriously and reduced proceeds to the grower to an important extent, though exporters have in various instances cleared large profits. Special efforts have been made for the last two years to increase exports to the United States and at the same time secure prices more nearly approaching those obtained in Europe.

The principal coffee-growing district is in the southwestern part of the island, with Yauco and Lares as centers. The three chief ports of shipment are Ponce, San Juan and Mayaguez, with Aguadilla in fourth place. Coffee properties vary considerably in size and there are innumerable small planters, many of whom are financed between crops by the merchants in their respective districts. However, there are also quite a number of large planters harvesting a crop of 100,000 pounds and more.

The crop harvested for 1914, months of October to December, was quite large and stocks on hand are still considerable. The crop for 1915 will be rather smaller than in previous years. The usual proportion in the different grades is generally maintained.

COFFEE SHIPPED FROM PORTO RICO, 1913 AND 1914.

1914.	Pounds.	Value.
To United States	410,913	$69,218
To Foreign Countries	49,801,034	8,124,326
1913.		
To United States	773,626	$132,970
To Foreign Countries	49,000,571	8,378,346

TOTAL VALUE OF COFFEE EXPORTS FOR 1901, AND 1910 TO 1914.

1901.	1910.	1911.
$1,678,765	$5,669,602	$4,992,779
12,157,240 lbs.	45,209,792 lbs.	33,937,021 lbs.
1912.	**1913.**	**1914.**
$6,754,913	$8,511,316	$8,193,544
40,146,365 lbs.	49,774,197 lbs.	50,211,947 lbs.

The principal distributing centers for general business, dry goods, cotton goods, etc., are San Juan, Ponce and Mayaguez, and practically the entire supply is furnished by the United States. Wholesale houses in almost all instances also operate retail stores, and while business conditions have not been very favorable for over a year past, they have been slowly improving since the beginning of this year. This tendency it is believed will continue, though a rapid improvement is not anticipated.

Stocks are generally large in all staple goods and in some instances even excessive. In fancy goods the same condition prevails, but even to a larger extent. Purchases for import are light in consequence. Sales to the interior of the island are only moderate. Collections are slow in general and the tendency is to be rather conservative. The smaller stores are in many instances operating under protection of wholesale houses, and frequently dependent upon the indulgence of their creditors. This condition of affairs has led to many attachments and failures during the last twelve months and consequently increased caution in the extension of credit.

San Juan, Ponce and Mayaguez are also the principal distributing centers for provisions, etc. The largest single item in provisions is rice, the principal food staple here. After this come meat products, wheat, flour, beans, etc., refined sugar and fish products. Practically all of the above are brought in from the United States, and while a certain tendency is apparent to economize, these staples continue to maintain more or less their normal volume of movement. However, the condition of many of the smaller houses is more or less unsatisfactory. Collections have been slow in general, and while the distributing houses have restricted credits for some time past, outstandings are still heavy and, in part, of problematic realization. Prevailing conditions have made themselves felt, and while a gradual recovery is expected, the present feeling continues to be one of caution.

Further items of importance brought into Porto Rico, chiefly from the United States, are cars, carriages, etc., cement, chemicals, drugs, etc., coal, fertilizers, manufactures of india rubber, iron and steel manufactures, leather manufactures, mineral oils, paper manufactures, soaps, lumber, furniture and other manufactures of wood.

Business conditions in these lines are practically the same as in the previous commodities discussed in detail. The character of stores in the interior is largely miscellaneous, and few houses specialize in any one line. Consequently all are more or less equally affected.

The general feeling has been improving during the last few months, though the usual attitude has been one of suspension rather than renewed action, and little disposition is shown so far to depart from this. The memory of last year's losses in the sugar industry is still vivid. They affected the Island so generally that the subsequent improvement has not yet been able to restore normal conditions. During the period of depression, and for some time after, a number of disastrous fires in different parts of the island also destroyed considerable values and caused insurance companies to curtail protection. Complete confidence has not yet been restored. Labor troubles accompanied prevailing conditions and made themselves especially felt in the sugar industry during the principal harvesting season. In some instances violence was resorted to and considerable agitation existed. While for some time it was feared that these troubles would have a serious effect on conditions in general, a satisfactory solution was subsequently found for them.

The following tables will illustrate the value of the various commodities mentioned, brought into Porto Rico during the fiscal years of 1914 and 1913.

	1914.		1913.	
	U. S.	All other.	U. S.	All other.
Mfrs. of cotton	$4,494,272	$139,864	$3,821,535	$112,005
Mfrs of silk	224,496	11,881	272,124	10,789
Mfrs. of wool	156,596	7,800	191,996	5,833
Provisions:				
Rice	5,306,364	11,247	5,069,527	2,289
Meat products	3,678,741	28,775	3,211,247	72,746
Wheat flour	1,608,504	.....	1,786,589	.....
Beans, vegetables, etc..	710,188	192,542	787,105	199,543
Refined sugar	727,966	.....	636,012	.....
Fish products	751,890	748,271	535,202	755,932
Cars, carriages, etc.	538,242	198	773,589	.....
Cement	339,682	1,840	480,387	1,224
Chemicals, drugs, etc..	521,382	193,931	496,507	117,283
Coal	367,484	.....	302,656	.....
Fertilizer	522,941	230,746	667,381	211,481
Mfrs of india rubber..	406,257	12,722	397,638	1,684
Iron and steel mfrs.	2,644,008	87,488	2,939,442	233,583
Leather mfrs	1,399,994	39,992	1,441,605	30,423
Mineral oils	647,473	60,053	660,028	66,802
Paper mfrs	639,014	106,718	554,014	103,356
Soaps	624,742	2,343	578,587	1,512
Lumber	753,357	44,739	969,486	63,662
Furniture and other mfrs. of wood	891,598	34,758	1,033,960	32,317

N. B.—All figures given are from official returns compiled by the Insular Government of Porto Rico.

TRADE CONDITIONS IN AUSTRALIA

Ending of the Long Drought Improves Business and Industry—Wheat Crop Light and Wool Movement Slow

Special Report from the Branch Office of R. G. Dun & Co., *Melbourne, Australia*

THE unusually severe drought that has prevailed throughout the greater part of Australia, causing a considerable shortage in the harvests, was broken recently by widespread rains. As a consequence of the change in weather, both the agricultural and trading communities are in more buoyant spirits. South Australia has just experienced the best rainfall that it has had for some two years. Victoria, during the last fortnight, has been visited by light rains which, although they have revived the soil, have not been heavy enough to be of material benefit. The weather also was rather cold. Further rains, however, are hoped for, although they are likely to come too late to be of service to the cattle grazers. In New South Wales drenching rains fell along the coast a fortnight ago, and, later, inland. Queensland also was in the drought area, and there have been losses among the sheep and cattle, especially the latter. New Zealand has also experienced a dry summer, but it had the benefit of a splendid rainfall some four or five weeks ago.

The amended return for South Australia's production of wheat during the last harvest shows a total of 3,500,000 bushels, as against 17,000,000 bushels the previous year, and 21,500,000 for 1912-13. The yield per acre for the respective years was 1.41, 7.47 and 10.34 bushels. In Victoria the wheat yield was 3,900,000 bushels, as compared with 32,900,000 for the previous year, the yield per acre being, respectively, 1.38 and 12.84 bushels. The oat crop was 1,600,000 bushels, as against 9,000,000 bushels for the year 1913-14.

In New South Wales the Government Statistician has just issued the result of the last wheat harvest, which shows that the actual yield was 12,800,000 bushels. The previous year's yield was 26,800,000 bushels.

The delay in selling last year's wool clip has also interfered with trade. The total catalogues offered in Australian selling centers to April 5 amounted to 961,000 bales, and the sales to 921,000, showing decreases of 508,000 and 559,000 bales, respectively. It is of course possible that a larger quantity of wool may have been shipped to be sold in London, though this is doubtful because of the inability to secure the necessary cargo space on steamers bound for Europe. A considerable quantity of last year's wool is still held in store. It is hoped that it will be disposed of in the usual course during the next two or three months. No wool sales have taken place for the last fortnight, owing to a disagreement between the selling and buying brokers.

In Queensland, trade conditions, considering the circumstances, are very good, and, were it not for the drought, the effects of the war would not be felt to any great extent. As a matter of fact, war conditions have been rather a benefit to the producer, as good prices are being obtained for all the products of the soil, wool and the goods manufactured for war purposes.

The State Governments, acting for the Imperial Government, have commandeered the outputs of all the woolen factories and meat-freezing establishments. Large quantities of frozen meats are being shipped to Europe. The Government has also claimed all the refrigerating space on ships leaving Australasia and New Zealand.

South Australia has recently gone through an election for the State Parliament. The Liberal Party was previously in power, but the Labor Party was returned by a good majority, making its position secure for the next three years.

The Prime Minister of the Commonwealth recently put some figures before the Parliament. In addition to the £18,000,000 which the Imperial Government loaned to the Commonwealth some months ago, it has agreed to lend a further amount of £6,500,000 for war purposes, and, in addition, £3,500,000 to enable the Commonwealth works now in progress to be continued. The Commonwealth has also the benefit of a loan of £10,000,000 from the banking institutions and the Commonwealth note issue, which is controlled by the Government and had a normal circulation prior to the war of some £9,000,000. This has now been increased to some £28,000,000.

The Victorian Government, during the last week or two, has floated a loan for £3,250,000, on the London market, at a fairly satisfactory price.

The Queensland gold yield for April was valued at £97,490, which is an increase of £18,538, as compared with the same month of 1914. The value of the gold production for the quarter ending March 31 was £290,320, which is £150,860 less than for the corresponding quarter of last year. Although the decrease seems considerable, it is not much more than half of the falling off recorded in the immediately preceding quarter, indicating that the industry is gradually recovering from the depression that occurred at the outbreak of the war.

New South Wales' gold yield for March was valued at £65,868, as compared with £38,873 for the same month of 1914. The yield for the first three months of this year amounts to £169,185, as compared with £151,997 for the same period of 1914.

The value of the Victorian gold output for March was £143,800, and for the first quarter of the year £336,030, the amounts being less in each case than for corresponding periods of 1914.

The West Australian production of gold for March was valued at £398,255, as compared with £393,422 for March, 1914. The total value of the gold produced during the first quarter of the present year was £1,260,653, and for the corresponding period a year ago, £1,308,077.

The gold production of the Commonwealth for the first quarter of the current year was 477,410 ounces, valued at about £20,289,925. This was 31,185 ounces less than for the corresponding period of 1914 and 48,082 ounces below the 1913 figures.

Trade conditions in New Zealand are satisfactory. That Dominion is a great producing country, and everything it has to sell brings fancy prices at home.

THE SITUATION IN EASTERN CANADA

General Business Conditions in the Province of Ontario, No Longer Disarranged by War, are Steadily Improving

By the Manager of the Branch Office of R. G. Dun & Co., *Toronto, Canada*

BUSINESS conditions in Canada are as good as could be expected. As a part of the British Empire, Canada, while far removed from the field of the greatest war in history, has taken an active part in the struggle. Naturally, the commercial situation in Canada has been very much unsettled since the commencement of hostilities. The altered circumstances have resulted in many radical changes of commercial policy, which have in a measure interrupted and disarranged the general course of trade. Nevertheless, the new situation created is working out admirably and forming a substantial basis for the future development of the country, and in many respects is proving to be beneficial to commerce.

Eighteen months before the commencement of hostilities our bankers and other close observers of events warned trade interests of a change which was impending. Canada had been enjoying great prosperity for a number of years, and this naturally brought about certain conditions which were uneconomic in their nature. There had been an era of too rapid expansion—a condition which is naturally followed by a period of business depression.

The war, to many, was an excuse for retrenchment. The slowing-down process is still in progress, and its results will be beneficial.

Already there are signs of improvement. Railway earnings and bank clearings in our chief cities were at their height two years ago. They have been receding since then, but the declines now are less severe, and the situation begins to show improvement. For instance, the clearings of the banks in Toronto for the month of May, 1915, were very gratifying. They were the highest of any month this year, and with the exception of October and December, the largest of any month since the war broke out. Comparative figures are: May, 1915, $150,352,850; April, 1915, $144,776,746; May, 1914, $180,771,533; May, 1913, $189,212,866.

For the first five months of this year bank clearings totaled $711,146,916, a decline of $167,523,896, or 19 per cent. from the same period last year.

In May, 1914, customs receipts fell $304,679 below the previous year; June, $211,675; July, $448,068; August, $169,000; September, $618,664; October, $569,756; November, $458,570; December, $380,279.

The customs receipts at Toronto, however, made a splendid showing for the month of May. As compared with May of last year they increased, this being the first instance of an improvement over the previous year since the war began. In the spring of 1914 customs receipts were dropping under those of the previous year, and when war broke out the declines were increased. The record loss was last September, but from then on improvement was shown, as the following figures indicate:

	1915.	1914.
May	$1,485,243	$1,462,769
April	1,502,797	1,584,895
March	1,590,000	1,740,522
February	1,387,040	1,532,960
January	1,144,225	1,487,270
Total	$7,109,305	$7,808,416

Liquidation in Canada had been noted before the war began, and since August further settlements have been made. Present conditions, however, are more satisfactory. Our banks have pursued a very conservative course. They have not sought new business, but have striven and succeeded well in turning a large proportion of their assets from a fixed into a liquid form. While the deposits of banks comprise the bulk of their liabilities—they being now above the billion mark—yet many of these institutions at present hold very large reserves in a liquid form—in fact the greatest in their history. Collectively, the proportion of cash reserve to liability at the end of April was nearly 30 per cent., an increase of 4 per cent. for the year and an increase of over 7 per cent. as compared with two years ago. In addition there is a large amount of almost immediately available reserve, comprised of "call loans" in Canada and securities owned by the banks. Liquid reserves in many individual cases run from 60 to 65 per cent. of liabilities. Such an accumulation of ready funds will no doubt result sooner or later in stimulating trade and commerce. A fair proportion of these liquid loans are revenue producing. For instance, Canadian banks now have $121,500,000 invested in call loans in New York and London. This is an increase of $47,000,000 in the five months to April 30, or 63 per cent.

Since July last there has been a steady liquidation of mercantile and industrial loans in the Dominion. With one exception, every month shows a decrease, which, in the nine months, has amounted to a total of $77,000,000. This decline in domestic loans was accompanied by a drop of $10,000,000 in the time loans outside Canada, making altogether a decrease of $87,000,000.

The President of the Imperial Bank, at the annual meeting a few weeks ago, pointed out that the immigrants coming into Canada from January 1 to May 1, 1915, numbered 16,146, as against 69,823 for the same four months of 1914; building permits in 31 principal cities were $7,600,000 in the first four months of 1915, as against $27,300,000 in the same period of 1914; bank clearings in the same period were $2,240,000,000 in 1915, as against $2,648,000,000 in 1914.

The general quietness of trade throughout the country has had the effect of increasing bank deposits. The domestic deposits in Canadian banks on April 30 amounted to $1,033,400,000, as against $1,004,200,000 a year ago, and $996,500,000 in 1913. In addition to these deposits there are $104,211,000 held in Canadian banks outside Canada, as compared with $113,404,000 a year ago, and $103,925,000 two years ago. The combined commercial and municipal loans in Canada are now $806,000,000, whereas in 1913, with deposits $37,000,000 smaller, the commercial and municipal loans were $899,000,000. The conservatism of our bankers is to be commended, and the readjustment of our banking to a sounder basis will in the future be of great benefit to the trading classes.

Recent events have brought about a change in the finances of the country. To deal intelligently with this subject, our foreign trade has to be considered. Canada has immense resources, and in their development much capital is required. In the past five or six years about 90 per cent. of the borrowings have been from London. These borrowings in the period stated, aggregated over a billion in money, including Federal, Provincial, municipal, railway and general industrial loans. Imports into the country were stimulated thereby, and while the funds went largely into the development of our railways, canals, harbors, etc., thus increasing our facilities for moving the crops and the products of the mines, etc., our exports failed to offset our imports. Canada's exports are increasing greatly, however, and the money spent in development will eventually result in adding largely to our export trade. The balances in years past have been against the country. But now a change has occurred, attributed partly to the war. Our imports from Europe, like those of the United States, have been greatly reduced since July last, while our exports have been largely increased, owing to the orders from the Allies for foodstuffs and munitions of war. For the twelve months ended March 31, 1914, our imports exceeded our exports by $162,900,000. This unfavorable balance, however, has been turned into a favorable one, as for the year ended March 31, 1915, our exports reached $461,442,000, while our imports were only $455,371,000, a balance of $6,071,000 in Canada's favor.

We borrowed less capital the past year, and reduced imports by .34 per cent. The current quarter's foreign trade promises to be better still.

The agricultural situation is bright indeed. The general field crops in the Province of Ontario never looked better at this time of the year. Owing to the extraordinary prices, farmers were induced to increase the area under wheat, and with a good harvest the situation will be much strengthened. It may be said that the farmers in this Province have not been touched by the general relaxation in business at the large centers. They have made money in late years, and the storekeepers in many districts have little cause for complaint. The field crops in Ontario last year are estimated to be worth $335,000,000, and this no doubt will be exceeded this year. The value of the gold and silver output from the mines in this Province is about $20,000,000 yearly.

A number of factories have turned in to furnish Britain and her Allies with munitions. The value of the orders received is estimated at $350,000,000. There is a better demand for labor, and besides those at and going to the front, several thousand men have been taken from here for work in factories of England.

The building trade in the city of Toronto has suffered with the general retrenchment. In May, 1915, for instance, the building permits issued were only 586, as compared with 1,030 in May, 1914, a decrease of 444. The buildings erected in May numbered 665, or a decrease of 812 as compared with May, 1914. The cost of the buildings put up in May, 1915, was $807,769, as against $2,827,513 for the corresponding month of last year—a decrease of $2,019,744. For the first five months of this year, the total of buildings was valued at $2,377,359, as against $10,541,085 in the five months of 1914, a shrinkage of $8,163,727.

MANITOBA'S BUSINESS OUTLOOK BRIGHT

Commercial and Manufacturing Insolvencies Decreasing and the Harvests Promise to be Abundant

WITH the turn of the year there was marked falling off in both the number and importance of commercial and manufacturing insolvencies, writes William M. Dawson, manager of the branch office of R. G. Dun & Co., at Winnipeg, Manitoba. The last half of April, the month of May and the first part of June witnessed some increase in liquidation, but on the other hand there were reported for the period from May 6, 1915, to June 24, 1915, in the Province of Manitoba 94 and in the Province of Saskatchewan 129 commencements of new enterprises. The Saskatchewan showing was especially good, the number of new concerns being larger than the number of discontinuances from all causes as reported. Manufacturing concerns do not figure to an important extent, but nearly all lines of commercial business are represented. This is all the more indicative of widespread and underlying confidence in the rapid recuperation of western Canada, when the comparative inactivity of building and construction and the attendant diminution of the earnings of so many skilled mechanics and laborers is considered.

The year, thus far, has shown a large proportionate increase of sales by mail order and catalogue, both to the country stores and direct to the consumer. Dry goods, clothing, boots and shoes, groceries and all kinds of farm machinery, implements and miscellaneous supplies swell the volume of this trade. The grain growers' association in the three western Provinces, with their membership aggregating over 30,000, are not unfriendly to the establishment of comprehensive systems of co-operative retail sales by mail, and have by their generous and general patronage in one direction given definite support to this plan.

During the last twelve months western wholesalers have been involuntarily sharing their local markets with a certain form of eastern liquidation through which large shipments of stocks have been distributed here through the medium of various retail and outlet concerns. There have been no really important insolvencies among our wholesalers for many years; all of them appear to have materially strengthened their position since August, 1914.

Investigation shows that our farmers are not neglecting the opportunities of capital, knowledge or environment to engage in mixed farming. Mixed farming is making larger strides proportionately than grain growing. The farmers of western Canada are prosperous, their cash resources are larger and they have their liabilities in better shape than for many years. The grain acreage of the West is over 12,000,000 acres, soil preparation is greater than ever before, seeding conditions were never surpassed, and June soil and weather conditions are all that could be desired. A wheat crop at least 65,000,000 bushels larger than last year is almost sure to be the result of the universal attention bestowed this year on crop cultivation, and under any circumstances the harvests will bring better prices than those of 1915.

SASKATCHEWAN EXPECTING A HEAVY HARVEST

An Active Demand in all Lines of Merchandise is Looked for when the Marketing of the Crops Begins

RETAIL trade and new building are reported as being quiet in the Saskatchewan district by R. McRae, Manager of R. G. DUN & Co.'s branch office at Saskatoon. Country retail merchants are experiencing a brisker trade than those in the cities, but the outlook for a considerable improvement this fall seems excellent, as, from present indications, the district will harvest one of the best crops in its history. This should bring a large return, and local jobbers anticipate an active demand in all lines of merchandise. For the present, merchants generally are carrying small stocks and are buying only sufficient for their current requirements until the harvest is assured.

The local government is employing a large number of men on a new bridge that is being built across the Saskatchewan River at Saskatoon, to join the city with the University. The cost of the completed structure will be about $400,000.

After July 1 all wholesale liquor and hotel licenses in Saskatchewan Province will be cancelled, and the government will establish dispensaries at different points. While it is felt that this action may entail some loss to merchants generally, it is believed that eventually it will work to the best interests of the people at large, and the new legislation is favorably received, especially in the rural districts.

Expectation of a good harvest and the assurance of high prices, as well as the prospects of a heavy immigration to this region after the war is over, have inspired business in this district with much confidence.

BUSINESS AND FINANCES IN ARGENTINA

Heavy Demand for Food Products Abroad—Failures Decreasing—More Paper Money in Circulation

ACCORDING to a report made by Consul William Dawson, Jr., at Rosario, paper money in circulation in Argentina on March 31, 1913, amounted to $373,000,000 (United States currency), of which 50 per cent. was held by the banks. Circulation on March 31, 1914, was $348,000,000, the banks holding 45 per cent. Returns for March 31, 1915, show a total circulation of $395,000,000, of which the banks held 55 per cent. The following figures, according to *La Nacion*, Buenos Aires, show the situation of the banks as respects deposits and loans and discounts:

	Total deposits.	Total loans and discounts.
March 31, 1913.....	$630,658,000	$641,146,000
March 31, 1914.....	589,897,000	607,305,000
March 31, 1915.....	536,015,000	480,053,000

Whereas March 31, 1914, showed an excess of loans and discounts over deposits of $17,408,000, the returns for March 31, 1915, show deposits exceeding loans and discounts by $55,962,000. This means a credit contraction during the year of $73,370,000.

The present situation is due to the very conservative policy of banks ever since the beginning of the financial depression and the recent important issues of paper money against gold deposited in Argentine legations in payment for food products exported to the European Continent, the United Kingdom and the United States. The Banco de la Nación has suspended the 1 per cent. interest formerly paid to depositors on current accounts. Arrangements have also been made for the issue of $26,700,000 in 180-day Treasury notes at 6½ per cent., which will be taken by the banks as a favorable investment for surplus deposits.

The heavy demand abroad for Argentine food products, coupled with the tremendous falling off in imports, will entail the steady increase of circulation in Argentina. The monetary plethora is the natural result of lack of confidence and initiative following a long period of financial depression. The tardiness in resumption of commercial activity is further aggravated by the war. While it does not appear likely that the next few months will see any very marked improvement in the import trade, the eventual increase in Argentina's purchasing power due to the very favorable trade balance should be borne in mind by exporters looking for a future rather than an immediate market.

It is satisfactory to note that figures showing failures for April, 1915, are about half those of March and less than half as large as the figures for April, 1914.

ARGENTINA'S FOREIGN TRADE

Report for the First Quarter Indicates a Favorable Balance — Chief Items of Import and Export

THE Director-General of Statistics of the nation has published some of the figures of the foreign commerce of the Republic during the first quarter of 1915.

The estimated value of the merchandise imported is $49,297,625 gold, and the value of the exports is calculated at $157,265,324; therefore, the total amount of the international commercial interchange reaches $205,562,949 gold, and the apparent balance of trade in favor of the country amounts to $107,967,699 gold.

Compared with the imports and exports of the first quarter of 1914, the value of the former diminished by $45,854,554 gold, and that of the exports increased by $35,316,208 gold.

The following is the classification of the imports, in groups of merchandise and products and in gold dollars: Live animals, 242,500; foodstuffs, 4,999,970; tobacco and its applications, 1,494,876; liquors, 1,599,416; textile materials, manufactured and unmanufactured, 12,625,969; oils and fat, 5,484,328; chemical and pharmaceutical substances, 2,816,602; colors and dyes, 404,181; wood, wooden substances and the manufactures thereof, 905,412; paper and articles made of paper, 1,396,097; leather and its manufactures, 430,187; iron and articles made of iron, 4,313,761; other metals and their manufactures, 1,242,079; agricultural implements, machinery and materials, 418,596; materials and machinery for locomotion, 1,692,861; stone, earths, glass, porcelain and earthenware, 4,895,174; building materials, 2,489,654; electrical materials and appliances 862,280; merchandise not classified, 982,717.

All the above-mentioned groups diminished in value compared with those of the imports of January to March, 1914, except live animals and oils, which increased by 46,273 and 917,917, respectively. The principal diminutions were 1,911,392 in foodstuffs, 940,780 in liquors, 8,429,839 in textiles, 1,164,000 in chemical and pharmaceutical substances, 1,185,518 in woods, 1,138,795 in leather, 7,848,528 in iron, 1,491,740 in other metals, 8,019,263 in articles for locomotion, 4,668,038 in glass, porcelain, etc., 4,656,405 in building materials and 1,693,499 in electrical materials and appliances.

The exports were classified as follows: Pastoral products, 55,172,351 (a diminution compared with those of the first quarter of 1914, or 3,305,729); agricultural productions, 97,174,330 (increase of 37,474,343); forestal products, 3,461,843 (increase of 976,166); mining products, 5,244 (less by 27,419); products of hunting, shooting and fishing, 314,234 (diminution of 324,517); products not classified, 1,137,322.

In the first quarter of this year there were exported 73,336 tons of frozen beef and 3,917 of chilled beef (diminutions of 16,252 and 13,218, respectively), and 9,858 tons of frozen mutton and lamb less by 6,496); 56,483 tons of wool (diminution 11,255); hides and skins, 29,900 tons (increase of 2,500); 349,671 tons of oats (increase 144,213); 295,589 tons of linseed (less by 147,926); 781,032 tons of maize (increase 420,299); 977,615 tons of wheat (increase of 411,505); 21,999 tons of flour (less by 2,830); 31,365 tons of quebracho extract (increase 14,733); 34,379 tons of quebracho logs (less by 70,728).—(*The Standard*, Buenos Aires.)

ENGLISH COMMODITY PRICES STILL RISING

May Showed an Increasee of 32 1-2 Per Cent. in 45 Commodities Compared with June, 1914

THE *Statist's* index-numbers of the prices of 45 commodities, the average for the 11 years 1867-77 being 100, are:

ANNUAL NUMBERS. Period	Average.	MONTHLY NUMBERS. Month.	Index-No.
1873	111	July, 1896	59.2
1878-87	79	May, 1907	82.4
1890-99	66	February, 1909	71.9
1905-14	79	May, 1914	82.3
1880	88	June, 1914	81.2
1896	61	July, 1914	82.4
1904	70	August, 1914	87.9
1905	72	September, 1914	89.3
1906	77	October, 1914	89.8
1907	80	November, 1914	88.8
1908	73	December, 1914	91.6
1909	74	January, 1915	96.4
1910	78	February, 1915	100.9
1911	80	March, 1915	103.7
1912 and 1913	85	April, 1915	105.9
1914	86	May, 1915	107.6

There was a further upward tendency in the prices of commodities in May, the advance during the month being equal to 1.6 per cent., which raised the index-number to 107.6. Compared with June, 1914, a normal month immediately preceding the outbreak of hostilities, the rise in the number has been 26.4, or about 32½ per cent. Higher prices than those at the end of May have not been current since 1873, when the number for the year was 111.

As regards vegetable food, the index-number rose 1 per cent. to 110.1, in comparison with 66.5 in June, a total rise of 65.6 per cent. in the eleven months. That the rise in this department was not greater was due to the higher prices ruling for English wheat, barley and oats having been offset to some extent by easier prices for American wheat and maize. The greatest percentage increase in prices during the past month occurred in animal food (meat and butter), where, with the exception of pork, there was a general rise, especially in beef. The number for animal food was 7.6 per cent. higher for the month at 134.5, thus making a total rise of almost 38 per cent. since June. This number is unprecedentedly high, the previous highest having been the average of 109 for 1873. The somewhat higher price of sugar was almost entirely neutralized by declines in coffee and tea, and for May the number was only a shade up at 72, which indicates a rise of 39 per cent. since June last. Apart from lead, minerals were firmer, and the number was raised by .9 to 119.6, making the total rise 23.7 for the eleven months. With the exception of colonial wool and hemp, the prices of textiles were lower, and at 86.5 the number was 2.2 per cent. less than for April. Owing to the drop in the prices of cotton and silk the index-number for textiles is only 7.3 per cent.

higher than eleven months ago. Despite easier quotations for tallow, palm oil and olive oil, and no change in many items, the higher price of leather arising from the increased demands for the Allied armies raised the index-number for sundry materials a further .9 per cent. to 109.4. Since the commencement of the war the rise in this section has been 32.6 per cent.

METALS USED IN MAKING SHELLS

Great Quantities of Copper, Spelter and Lead Needed to Meet the Demands of War

THE demands of manufacturers of shrapnel, shells and rifle cartridges constitute an important item of consumption in copper, spelter, and other metals. The metals, needed to fill the war orders already placed, may be estimated at over 10 per cent. of last year's copper production of the United States, about 7 per cent. of the spelter production, and nearly 20 per cent. of the lead production.

A British 18-pounder, or 3.3-inch caliber shrapnel, requires 5 pounds 9⅞ ounces of brass, the various brass parts and their weight being: Cartridge case, 3 pounds 1 ounce; primer, 4 ounces; fuse, 1 pound 7⅝ ounces; fuse socket, 8½ ounces; fuse cover, 2 ounces; and tube, 2¾ ounces; total, 5 pounds 9⅞ ounces.

Of this amount of brass, two-thirds is copper and one-third spelter (in some cases the copper content runs up to 70 per cent.) so that the amount of copper used in making the brass parts for one of these shells is very nearly 3¾ pounds. A small copper band around the shell adds 4¾ ounces, making the total copper 4.04 pounds.

Spelter consumption per shell of this size is a shade under 1 pound 14 ounces, or 1.87 pounds.

Lead bullets weighing 7.92 pounds, and composed of seven parts lead to one of antimony, constitute the metal load of the projectile, so that each shrapnel requires 6.93 pounds of lead and 0.99 pound of antimony.

Estimating the total orders for shrapnel and other shells placed here by Europe at 25,000,000 shells, these orders would call for a total of 101,000,000 pounds of copper, 46,750,000 pounds of spelter, 173,250,000 pounds of lead, and 24,750,000 pounds of antimony.

The metal consumption, actually, is larger, as a fair proportion of the shells placed are 4.7-inch howitzer shells, taking more brass; and there are also some 6-inch, 7½-inch and probably 9-inch shells being made. The metal consumption of shells varies as the cube of their diameter, a 6-inch shell, for instance, requiring eight times as much metal as a 3-inch of the same type.

Copper refinery production in the United States, in 1914, amounted to 1,500,000,000 pounds. On this basis the takings for shell manufacture would require nearly 10 per cent. of output. Production, however, will be increased this year.

Spelter production in 1914 was 721,140,000 pounds, the takings for shell manufacture thus representing about 6½ per cent. of last year's output, which will also be higher in 1915.

Lead production was 925,000,000 pounds, the takings for shells representing nearly 19 per cent. of last year's output.

No consideration is taken in these calculations of the other war needs of metal. Rifle cartridges, for instance, are composed mainly of copper, there being 1 pound of the red metal used in making 24 Lebel cartridges, a type widely used by the French army. Every 125 of these cartridges made consume 1 pound of spelter, and a small amount of nickel.

Steel consumption per shell varies more widely with the different types, and presents more difficulties in calculating. A finished 3.3-inch shell contains 6 pounds 15¼ ounces of steel, the steel shell weighing 6 pounds 5¾ ounces, and the diaphragm 9½ ounces. If the shell is made from a steel bar, the weight of this is about 17 pounds; while a forging for the same purpose weighs approximately 14½ pounds, and a "bottle" made by the seamless tube process somewhat less. A large percentage of the steel used is wasted, which is not the case in the other metals, the scrap of the brass, etc., being remelted and used.—*Wall Street Journal.*

SMALL TOWN AUTOMOBILE AGENCIES

How the Manager of a General Store in a Canadian Village Grasped an Opportunity

WHAT is now a prosperous business in an Ontario village had its beginning in the chance call of an American tourist who was obliged to stop there because of an accident to his car," says U. S. Consul Felix S. S. Johnson, of Kingston, Ont., Canada, in a recent *Commerce Report*. "The manager of the only general store in the village saw in this incident an opportunity for the sale of automobile supplies, and he accordingly added a small stock of pumps, tires, spark plugs, etc., and gasoline to his hardware department.

"The growth of his business has been such that to-day his window displays of motor car accessories compare favorably with those throughout Canada; he has built a garage and engaged a competent machinist; and he last year disposed of 22 American cars to farmers in the surrounding country, and this year, despite the war, has secured orders for 14. His automobile sales are a development of the motor-supply department, for he saw that, unless he created a local demand, his trade in accessories would be limited to the infrequent tourist.

"The success of this general store manager would seem to point the way for agencies in other rural sections. The agents in these places have more spare time on their hands, and with a large circle of friends among the farmers, it is far easier for them to interest would-be purchasers than a salesman sent out from one of the large Canadian cities, who would be a stranger to the men he approached and, as such, looked upon askance."

HOW TO SEE SOUTH AMERICA

UNDER the title of *"The South American Tour,"* Miss Annie S. Peck, the distinguished traveler and mountain climber, has produced a book that those who are planning to visit the interesting continent south of Panama may well carry along as a *vade mecum*. While in no sense a guide book, it contains many practical hints and much miscellaneous information that the tourist who is visiting these countries for the first time will find invaluable—facts that have been suggested by Miss Peck's many voyages through that part of the world. The book follows closely the itinerary around the continent, starting from New York via the Panama Canal and thence down the West Coast. Each place at which the boat stops is briefly described, and also points of interest that can be reached by side excursions.

In this volume the author refrains from retelling the story of her successful ascents of some of the giants of the Andes, such as that of Mount Huascarán on September 2, 1908—the first time this snowclad peak was ever scaled—but her frequent references to the mountains and graphic descriptions of some of them, possess an added interest from the fact that she has not only seen them many times, but explored them. After a few preliminary chapters on Panama and the trip from New York, the author gives a brief account of Ecuador, then devotes nearly a hundred very interesting and instructive pages to Peru. Her account of Bolivia is also as extended as the limits of a single volume will permit, while five chapters are devoted to Chile. Both the sea route to Buenos Aires and the Andean route are described and the chapters on the Argentine Republic contain an interesting account of the Iguazu Falls. The author also visits Paraguay and Uruguay, and devotes six chapters to Brazil and one to South American trade.

**"The South American Tour,"* by Annie S. Peck. Illustrated chiefly from photographs taken by the author. George H. Doran Company, publishers, New York. Price, $2.50 net.

TWO MORE SOUTH AMERICAN HANDBOOKS

IN furtherance of their admirable plan to produce a series of South American handbooks in response to the rapidly growing demand for convenient works of reference regarding that continent, Messrs D. Appleton & Company have published volumes on Peru and Colombia.* The former is by E. C. Vivian, and the latter by L. Lévine. Like the other volumes in this useful set of books, these take up their respective countries systematically, describing first geographical and physical features, then presenting a brief historical sketch, and finally devoting a chapter each to such topics as Departments and Population, Finance, Commercial and Social Conditions, Inland Communication, Harbors and Ports, Forests and Forest Products, Agriculture, Mining, Manufactures, Imports and Exports and a Gazetteer of the Important Towns.

While written with little or no pretense as to literary style, this orderly arrangement of subjects discussed renders the volumes very convenient for ready reference, and entitles them to a place in the library of every concern engaged in trade with those countries. The volumes are indexed, contain a number of illustrations, and some very useful appendices regarding currency, weights and measures, commercial treaties, etc.

**"Peru,"* by E. C. Vivian. Published by D. Appleton & Company, New York. Price, $1.50 net.
"Colombia," by V. Lévine. Published by D. Appleton & Company, New York. Price, $1.50 net.

AN AUTOMOBILE CHART

AS the number of persons who run their own cars is increasing, so is the literature devoted to their instruction. In this, automobile charts have an important place. One of the most recent of these * shows clear sectional views of all portions of the power machinery of the Ford car. It is designed to make the average owner independent of the roadside repair shop when touring.

* *"A New Ford Engine Chart,"* by Victor W. Pagé. M.E. Published by The Norman W. Henley Publishing Co., 132 Nassau St., New York, U. S. A. Price, 25 cents.

Information for Buyers

As it is frequently impossible for advertisers to explain clearly the purpose or particular merits of their products in the advertising columns, space in this section is placed at their disposal to enable them to do so. It is proper to add that they, and not the publishers, are authority for the statements made.

The Famous Wines of Malaga

MALAGA, on the Mediterranean coast of Spain, is famous the world over for its wines. Travelers in that part of Europe never fail to sojourn there long enough to pay a visit to the great bodegas that are a feature of this ancient city. The production

Interior view of the offices of Adolfo Pries y Cia., wine merchants, Malaga, Spain

and exportation of wines—the finest of which are the Muscatels—is the principal industry of the place. Among the many large firms engaged in this industry the house of Adolfo Pries y Cia stands high.

The firm was founded in 1770. Its managing partner is Don Jose Arias Barrientos. The other active partners comprise the Conde de Pries and his brother Don Alvaro Pries, sons of the owner, the Senora Condesa Viuda de Pries. The Chief of the Bodegas and of the American Department, Don Pedro Robles Pugnaire, has recently returned from Cuba which country is a large consumer of the Spanish wines that are purveyed by the house referred to.

The total area of the edifices and patios where this firm conducts its business exceeds 30,000 sq. metres. Much machinery and many workmen are employed merely in the making of cases, barrels and kegs for shipping the wine overseas. Another large department is devoted to the apparatus for rectifying, distilling and otherwise preparing the various classes of products for the market.

In the vaults where the wines are stored are some of the most ancient vintages to be found in Spain. In one of the bodegas is wine 150 years old. It is not offered for sale, although a few years ago Baron de Rothschild, who was yachting in the Mediterranean and visited Malaga, insisted on being permitted to purchase a little of it.

The house of Adolfo Pries y Cia, besides its headquarters in Malaga, has important manufacturing and distributing branches in Paiporta (Valencia) and in Daimel (Ciudad Real). This firm is well known around the world as producers and distributors of sound wines of the Muscatel, Pedro Ximenez and Soleados classes. They also are manufacturers of vermouths and cognacs of quality. Correspondence addressed to them will meet with the most prompt and courteous attention.

Malaga, historically as well as industrially, is one of the most interesting cities of Spain. It is supposed to have been founded by the Phœnicians. Later it became a possession of Carthage, and was an important place under the Romans. The Christians took it from the Moors in 1487. The city is built in the form of an amphitheater, enclosed by mountains.

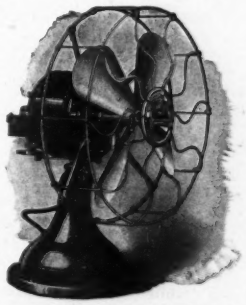
A view of one of the bottling, packing and shipping rooms in the establishment of Adolfo Pries y Cia., at Malaga, the Muscatel wine center

Electric Fans

THE electric fan has become indispensable in the tropics the year around, and in the temperate zones during the summer. Fans of American manufacture are sold all over the world. They are made in many forms and sizes. Some depend from the ceiling and are a vast improvement over the punkah, which, until electricity took the place of the punkah boy, was used throughout India and the Far East. Others are of the rapidly revolving type, easily portable and highly efficient.

The Robbins & Myers Co., Springfield, Ohio, U. S. A., are among the largest manufacturers in the world of electric fans and small motors. Their line includes all types and sizes for operation on all commercial direct and alternating current circuits. They state that their fans are guaranteed to give reliable, satisfactory service if installed and operated properly, and that they desire to be informed, through the dealer or directly by the individual customer, of the least dissatisfaction so that they may rectify it immediately. It is the satisfactory service that their fans give, they state, that has made them the choice of those who have tried them, and which in turn has made them highly satisfactory and profitable for the dealer to handle.

A ceiling fan that takes the place of the punkah once universally used in India



This portable oscillating gear type of electric fan is much used

The large fan catalogue issued by this firm will be sent to any address on request.

A Waterproofed White Portland Cement

A COPIOUSLY illustrated little pamphlet giving examples of construction and describing the principal features of their "Medusa" Waterproofed White Portland Cement has recently been issued by the Sandusky Portland Cement Company, of Sandusky, Ohio, U. S. A. In calling attention to the good qualities of this cement, the manufacturers state that while engineers and architects have always appreciated the desirability of Portland cement being absolutely waterproof they have in many instances hesitated to incor-

porate in their specifications any of the waterproofing compounds recommended for that purpose, because of the effect it might have upon the strength of the concrete, especially in cases where the mixing was done by inexperienced labor.

In the Medusa Waterproofed White Portland Cement all objections of this nature are overcome, because this product consists of the Medusa waterproofing compound and the company's well-known white Portland cement ground in together during the process of manufacture. This insures perfect mixing under ideal conditions, with the proper proportions of each ingredient incorporated with scientific exactitude. Medusa waterproofed cement is ground to the extreme degree of fineness, the company stating that 99 per cent. will pass through a hundred-mesh sieve, thus insuring the development of the highest tensile strength in the finished product.

Medusa waterproofed Portland cement is snow-white in color, but can be colored to any shade or tint desired, so that it lends itself most admirably to any decorative scheme or design of any class of construction. It has been used on many of the most noted buildings that have been erected in the United States during the past few years with eminently satisfactory results, a fact, according to the makers, that testifies eloquently to its superior qualities. This pamphlet, which includes, besides numerous illustrations of buildings in which it has been used, a large amount of miscellaneous information pertaining to white Portland cement, should be in the hands of everyone interested in cement construction. A copy can be obtained without charge by addressing the company direct.

Metal Beds, Springs, Canopies, Cots and Cribs

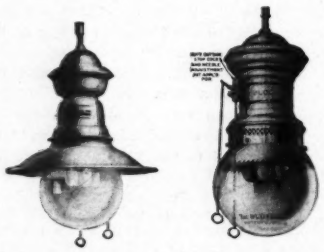
METAL beds and woven wire mattresses of American manufacture are in use all over the world. For many reasons they are preferred to beds of wood. In the tropics they are not subject to the ravages of insects. In the temperate zones they are better liked by housekeepers because they are more convenient and easier to care for. Their advantages, although many, are outnumbered by the great variety of styles and patterns in which they may be had. These range from the most simple and severe outlines to those that are highly decorative—adorned with polished brass or harmonious designs in gilding or color.

Illinois, U. S. A., for example, make a large, handsome and varied line of beds to withstand any climate. They also manufacture "Link-Fabric" springs, stationary and adjustable canopies, cots and cribs.

The diversity and beauty of the product of this concern cannot be described adequately by the use of words alone. The illustrations that accompany this article will give some idea of the designs, but the large and beautifully illustrated catalogue of this company —which they will send on request to distributors and wholesalers—will afford fuller information. Many of the pictures show the exact coloring used in the ornamentation of the beds. These "Columbia" beds are made of iron, steel and brass. The manufacturers solicit correspondence in any language from wholesale and retail distributors in every part of the world. Their product is well made, attractive and so reasonably priced that merchants abroad have found it a profitable and steadily growing line to handle.

Gas Mantles and Arc Lamps

INCANDESCENT mantles for natural and artificial gas, gasoline, kerosene and liquid gas, and the appliances with which they are used, such as inverted gas arc lamps for indoor and outdoor lighting; inverted and upright gas burners, gas lights, glassware and other devices for residences and commercial houses, have revolutionized the science of illumination. All these articles are made in great variety by the Block Gas Mantle Co., Youngstown, Ohio, U. S. A.



Gas lamps that are scientifically designed, attractive, efficient and durable

Their mantles are packed in many forms of cartons which enable them to be attractively displayed by the retailer. Their "Block" inverted arc lamps are constructed with a view to obtaining the greatest brilliancy, economy and durability. Any arc lamp, even one of the poorest construction, can be keyed up to a point where it gives good results temporarily. Such a lamp, however, is not likely to remain in good condition for six months without breaking many mantles and much glassware. It is also wasteful in its consumption of gas. The "Block" arc lamps, the manufacturers point out, are scientifically designed, neat and attractive in appearance, of remarkable brilliancy and solid construction, and are built to last a lifetime. Once regulated to the highest luminosity, it is stated that they will stay adjusted for months. The light will not deteriorate, neither will the gas consumption increase.

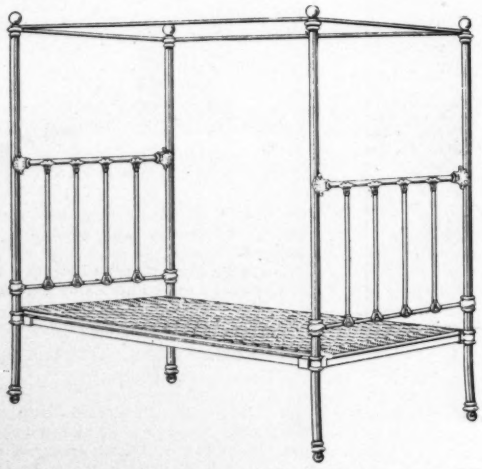
The by-pass and "snap" globe holder are exclusive features of these lamps. The globe can be removed instantly, cleaned and replaced without danger of breaking the mantles. A soft, brilliant light of the daylight color is still another characteristic of these lamps.

Descriptive catalogues of these lamps and mantles and of other lighting supplies may be obtained by writing to the company at the above address.

Superiority of Artificial Leather for Certain Purposes

THE rapidly increasing use of artificial leather in almost every part of the civilized world indicates that it is making good the claims of its manufacturers that for certain purposes it gives at least as good, and in many instances much better, service than genuine leather. It is especially preferred for the upholstering of automobiles, covering the cushions of boats, and for other articles liable to exposure to the weather, as it cannot be stained by moisture and is entirely impervious to water. It is moderate in price, very durable, and can be supplied in a great variety of shades and colors.

One of the most popular articles of this nature is what is known as "Fabrikold," manufactured by the Du Pont Fabrikoid Company, Dept. 1601, Wilmington, Del., U. S. A., a material bearing so perfect a resemblance to genuine leather of the best quality that a close examination is needed to detect the difference. If it were possible to obtain real grain leather at a reasonable cost, the field of usefulness for such an article as "Fabrikoid" would be much circumscribed, but the fact is that the price of leather has risen to such a high point that every effort has been made to cheapen its production. The result has been the manufacture of large quantities of leather known in the trade as splits, which are made by splitting the hides into four separate sheets. The first two of these sheets can be made into leather of very fair quality, but the last two, which are termed the splits, even when they are tanned, filled and treated



This is but one of many attractive styles of canopy beds, made of iron and brass

A metal crib like this represents the last word in comfort and safety for infants

A metal bed may seem a simple thing to design and manufacture. Yet a vast amount of artistic and mechanical skill is employed by the great manufacturers. The Joseph Turk Mfg. Co., Bradley, Kankakee County,

so as to be quite attractive in appearance when new, possess little in the way of durability or strength to recommend them for any kind of covering.

However, the cheapness of these splits has up to a comparatively short time ago caused them to be used very extensively for the covering of automobile cushions and furniture, even though they have never given satisfaction. This has caused manufacturers to look around for an acceptable substitute, and their search has apparently been ended by the introduction of "Fabrikoid." Within the past two years several hundred thousand automobiles have been upholstered with artificial leather, and the fact that many prominent manufacturers have entirely discontinued the use of splits affords ample proof that the modern substitute has met every demand that has been laid upon it.

"Fabrikoid" consists of a base of strong cotton cloth, coated with a tough flexible composition, which is embossed by steel plates to give it the feeling and appearance of any desired leather grain. It can be obtained in various grades and prices, widths, colors and grains. It comes in continuous rolls averaging sixty yards in length, and as it is of uniform strength and thickness it can be cut with a minimum of waste.

The company now has ready for distribution a handsome catalogue in which "Fabrikoid" is fully described, copies of which, together with samples and prices, will be sent to any part of the world upon receipt of the name and address of any interested person.

The catalogue is printed in colors. One illustration shows graphically how a hide is split and explains the different uses of the five thicknesses. The greater part of the book describes the way Fabrikoid is used.

Fine Enamel Dials, Window Letters and Signs

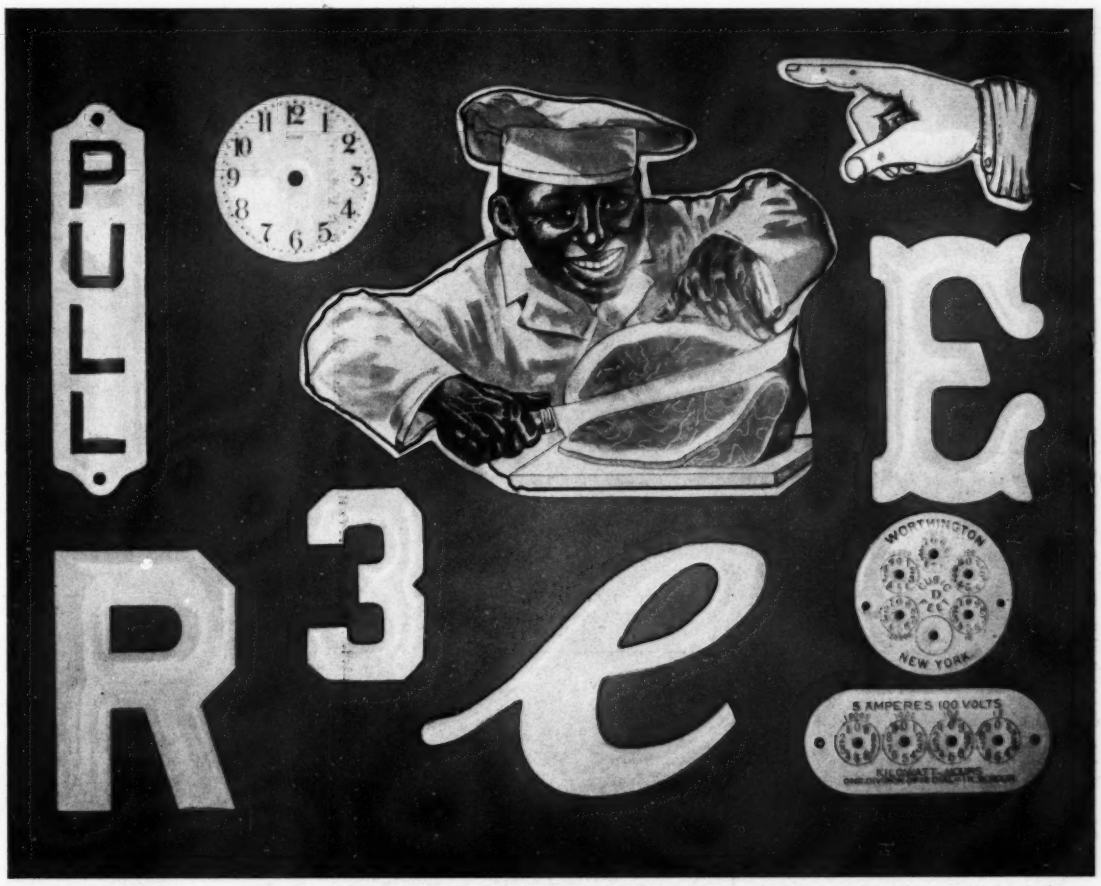
THAT progressive merchants in the principal business sections of the leading cities appreciate the value of an attractive sign or announcement on their shop windows is shown by the remarkable increase in the use of what are known as enamel letters. Not so very long ago, when a notice or name appeared on a window or door it was either painted or put on by some form of gilding. The former was often crudely done and unattractive in appearance, and both were expensive because they were not very durable, especially when it was necessary to wash the windows frequently.

The introduction of the enamel letters and signs, however, has removed all these objectionable features; they are moderate in price, absolutely unaffected by heat, cold or moisture, as easy to keep clean as the windows themselves, of decidedly artistic appearance, and can be made in so great a variety of designs that any taste, no matter how critical, can be suited.

For ordinary requirements the manufacturers keep in stock an extensive assortment of letters in a wide range of sizes, but when something distinctive is desired, such as a facsimile of a firm's signature or a script sign to place on the window, it can be obtained at a surprisingly low cost. A great many of these signs and letters are made in different colors and shadings, which enables the buyer to obtain some notably striking effects.

The Manhattan Dial Manufacturing Company, of 40 Lexington Avenue, Brooklyn, N. Y., U. S. A., who are also manufacturers of a line of enamel dials for clocks, gas, electric and water meters, give the following as a brief explanation of the methods of making these products: A blank of the letter or design is first cut out of copper, iron or whatever metal is to be used for the base, and the surface covered with porcelain enamel. It is then placed in a furnace heated to 2,000 degrees Fahrenheit, which transforms the enamel into an opaque glass or china covering. After cooling, the dial or sign is painted or decorated with mineral paint and returned to the furnace. This coloring is then burnt into the enamel, thus making it weatherproof and absolutely preventing any possibility of fading.

The company is desirous of forming connections with persons or firms interested in merchandise of the above character, and will be pleased to forward price lists, catalogues and all other information desired to any address in the world upon request.



Enamel letters and signs attract the eye; they are moderate in price, unaffected by heat, cold or moisture, easily cleaned, and come in a great variety of designs, some of which, the product of the Manhattan Dial Mfg. Co., are here shown

Orders for Refrigerating Machinery

THE Vilter Manufacturing Company, 754-794 Clinton Street, Milwaukee, Wis., U. S. A., write that they have just received an order for twenty refrigerating plants from an important condensed milk company, to be installed in various cities in the United States.

This company's business abroad is also improving steadily, as an order for refrigerating apparatus amounting to about five carloads has lately been received from Russia, another order from Japan amounting to about eight carloads, one from China amounting to about ten carloads, one from Canada to about five carloads, and one from South America amounting to about eight carloads.

Parties interested in refrigerating machinery, ice-making machinery, Corliss engines, or special machinery for brewers and bottlers should write to this concern for catalogues and export price lists.

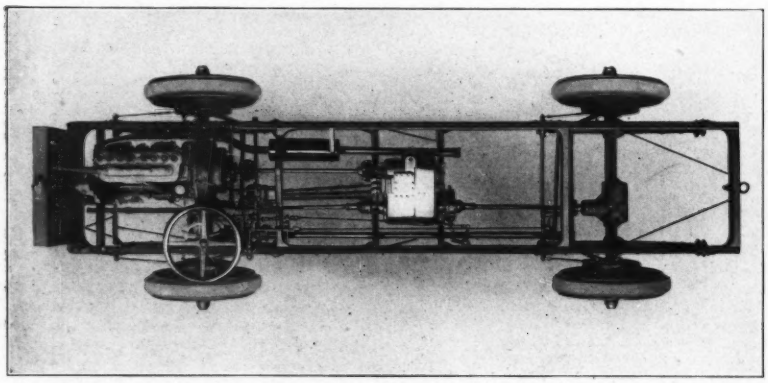
A Motor Truck with Power on all Four Wheels

THE "Jeffery Quad" has the power on all four wheels. It drives, brakes and steers on every one of them. It has been found as efficient in war as it is economical in peace. More than a thousand of these powerful motor trucks have been built and bought in the last four months, and are now delivering service all over the world.

The "Jeffery Quad" is made by The Thomas B. Jeffery Co., Kenosha, Wisconsin, U. S. A. (In writing for catalogues or information, the words "Department D-7" should be included in the above address.) Some idea of the extent of the plant may be gathered from the statement that the floor space of the factory is 25 acres, and the ground area, 101 acres. In the Jeffery works every vital part of the Jeffery truck is made with such accuracy that each part is easily interchangeable.

A good idea of the desirability and excellence of a motor truck can be gathered from a glance at a list of its buyers. Among these the United States and eight other leading Governments of the world have standardized the "Jeffery Quad" for army field service work. They did this only after subjecting the truck to the most severe tests. In all these trials, however, as well as in long-continued actual service under the most trying conditions, the "Jeffery Quad" showed its phenomenal power, stamina and efficiency. The United States Government, for example, specified that the truck had to go anywhere a four-mule team could. The "Jeffery Quad" met these and all other requirements. It is also used by every sort of business and industry in all parts of the world.

The Jeffery Quad is used by the Standard Oil Company in its delivery service. The illustration shows one of these machines at work among the midwinter snows



This view of the chassis of the Jeffery Quad will give an idea of mechanism, particularly of the transmission and of the steering tube operating all four wheels

In the rigors of winter, when the snow lies deep, the "Quad" does its day's work with accustomed regularity. In the sun-scorched deserts, where the loose sand is worse than snow to travel through, the "Quad" is no less reliable. Going over rough country, a 3-foot ditch would halt almost any motor truck but a "Quad." Mud to the axles may retard, but does not stop this truck's progress. A "Quad" has been driven over a wide stretch of railway tracks where the metals are 20 inches high. For climbing hills and fording rivers it is unequalled. The front wheels climb while the rear wheels hold them against the bank and so secure traction—that's the secret.

The "Jeffery Quads" that have been furnished for military use drive from both ends. They have four speeds forward and four speeds reverse. The driver at one end has control of the steering brakes and clutch when the "Quad" is going forward, and the driver at the other end similar control when the machine moves backward.

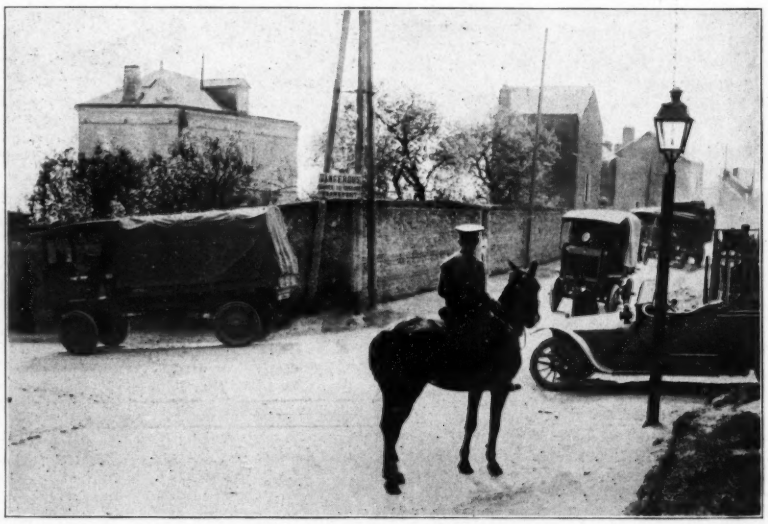
In the woods, the "Quad" will drag logs to the mill or river. In the lumber yard it will pull wagons or other freight around and needs no special floor or paving to do so.

The foregoing are simply random indications of some of the possibilities and applications of this motor vehicle. Its construction and design are no less interesting. With the exception of the motor and transmission, the "Quad" truck is practically the same fore and aft. The four wheels, with the running gear to which they are connected, are identically the same and are interchangeable one with the other. The four tires are identical and interchangeable. Their wear is practically the same. Many other constructional details are also identical and interchangeable. This explains why a truck of the remarkable qualities and construction of the "Quad" can be sold at such a comparatively low price

The Jeffery Co. have an interesting book on how to solve haulage problems. They will send it and their catalogue free.

The Jeffery Co. desire agencies in all parts of the world where they are not yet represented. They wish to announce that henceforth all matters pertaining to agencies, dealers, sales, advertising, etc., abroad, will be handled direct from the factory by the company's foreign department there. The full address is given in the second paragraph of this article.

"Somewhere in France," just behind the firing line. The Canadian trooper is telling the Jeffery Quads that the sign is not for them—only for rear-drive trucks



An Opportunity for Motor Car Dealers Abroad

WHENEVER there is an unprecedented demand for a certain article, prices usually advance. This is not the case, however, with American motor cars. Never before in the history of the industry have automobile manufacturers been so busy. Yet, instead of increasing prices, they are doing exactly the reverse. They are even making better cars for less money. Automobile buyers are getting bigger values than ever before. The tremendous output of American factories and the use of the most improved machinery and methods have decreased the costs of production. The purchasers of motor cars get the benefit.

One of the most striking instances of this is the four-cylinder Oldsmobile 1916 Model 43 that has just been placed on the market. It comes in either a five-passenger touring car or a two-passenger roadster. The list price of either, f. o. b. New York City, boxed for shipment, is $1,169. The total boxed weight is 3,470 pounds; size, boxed, approximately 351 cubic feet.

Some of the features of this car that will delight automobile dealers abroad especially are the large, low body—restful as an armchair; long, buoyant springs; deep, soft cushions; and the valve-in-head, four-cylinder motor.

This car is made by the Olds Motor Works, Lansing, Michigan, U. S. A. This company desire export agents in every country in the world where they are not already represented. They are prepared to grant exclusive agencies. Naturally, these are being taken up very actively, as the proposition is very attractive. Foreign representatives deal direct with the factory on the basis of the maximum discount. Those interested in obtaining an agency for a very desirable automobile should write to the company at once. In order to save time and correspondence, it would be well to state experience, business facilities, and any other points which render the concern inquiring specially qualified for such an important and profitable connection.

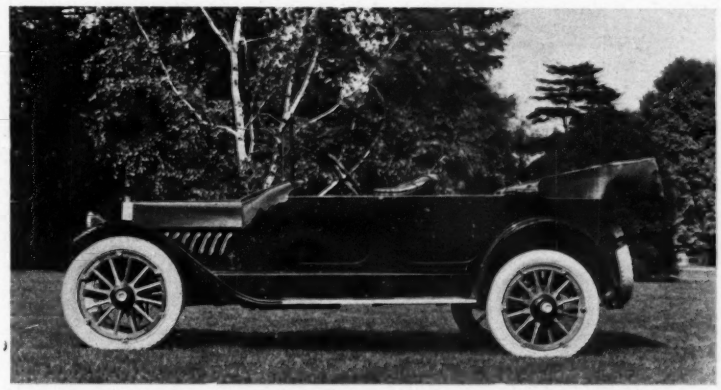
Here are the mechanical details of this new, moderate-priced car:

The general lines and details of the "42" Oldsmobile were adhered to, but a wheelbase of 120 inches gives the car a considerably longer appearance with a more sweeping contour, and allows greater space for passengers. In the touring car, for example, the tonneau measures 47⅝ inches from rear seat to front seat, and the front compartment 41 inches from the inside of the seat back to the clutch pedal. The doors have the uncommon width of 23 inches. The body sides are high and the cushions placed somewhat deeper in the body, so that on the whole considerably more riding comfort for passengers is afforded.

A four-cylinder motor of the valve-in-head type developing over 30 horsepower on block test is employed; bore 3½ inches, stroke 5 inches. Working parts are completely covered with an effective metal silencer. Cooling is effected by a centrifugal water pump. Gasoline is drawn by a vacuum system to the carburetor from the gasoline tank, which is situated in the rear of the car. The Delco electric system, with a single unit for starting, lighting and ignition, is again used.

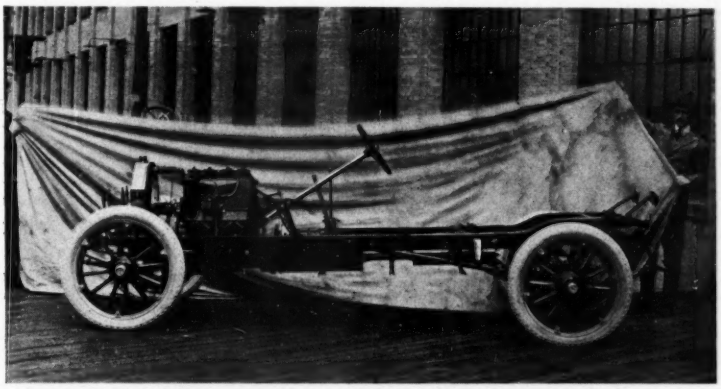
Three-quarter elliptic, underslung rear springs are declared to give exceptional riding qualities, with a low center of gravity, which is also desirable. A three-quarter floating rear axle with helical bevel drive gears is used in company with the Hotchkiss drive, and is said to contain the salient features of the full floating type axle.

Wheels finished in natural hickory with non-skid tires, front and rear, are a feature. Running boards and toe board are made of solid, cast aluminum. Instruments are mounted flush on an attractive dash of Circassian walnut, which contains two lockers for touring requisites such as goggles, gloves, smelling salts and the like.

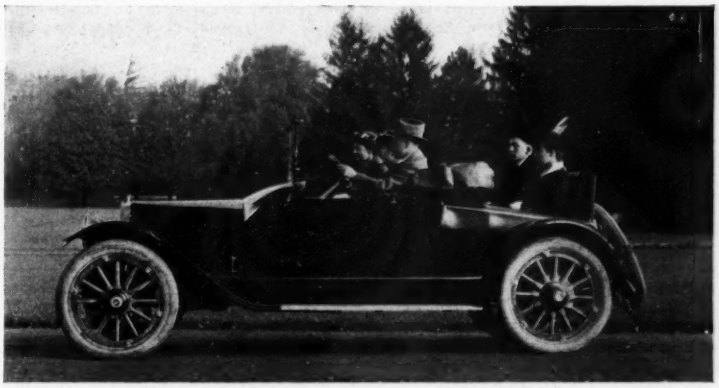


A 4-cylinder touring car priced at $1,169 f. o. b. New York, boxed for shipment; weight, 3,470 pounds; measurement, 351 cubic feet

Two body styles are furnished on the Model 43 chassis, a five-passenger touring car and a roadster of unusual pattern which is capable of seating four and even five passengers in emergency.



Side view of the new Oldsmobile four-cylinder chassis, whose wheelbase of 120 inches insures roominess and comfort for passengers



Oldsmobile runabout mounted on the four-cylinder Model 43 chassis, capable of seating four and even five passengers in an emergency

A Safety Electric Power Washer

ONE of the greatest trials of the average housekeeper is the weekly wash day. No matter how much the trouble, however, there are many fastidious persons who dislike to send their laundry to be done outside their homes where it will be washed in common with that of other families. Many devices have been introduced with the object of doing away as much as possible with wash-day annoyances, and it is generally conceded that the only satisfactory and really sanitary method of doing the family washing is by doing it yourself or having it done under your own supervision in your own home by means of an efficient washing machine operated by electricity or some other power.

A machine of this class that is said to meet all demands placed upon it in a most satisfactory way is the Meadows Safety Electric Power Washer, manufactured by The Meadows Manufacturing Company, of Pontiac, Illinois, U. S. A. With one of these washers in the house there is usually very little trouble in obtaining help, as the work is done so easily and rapidly that few servants object to it. The clothes or other materials are washed in a much better manner than by hand, and there is less wear and tear because the dirt is removed by vigorously agitating the water and not by hard, continuous rubbing on a

corrugated board. The method of operation of the Meadows Washer is simplicity itself, and yet there is no danger of tearing the clothes. On the lid of the tub is fastened what is termed a "dolly,' a contrivance resembling four extended fingers. These fingers grip the goods in the washer and when the power is turned on force them through the water, and as the water flows or is forced through the fabric the dirt or stains are necessarily removed.

A safety electric power washer that does away with most of the drudgery of laundry work in the household

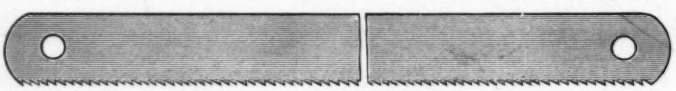
The wringing out of the clothes is practically automatic, which eliminates almost as much work as the washing itself. All that it is necessary to do is to insert one end of the article that has been washed in the wringer and to press the foot on the lever under the machine. This starts the wringer revolving, the clothes pass through and the water is squeezed out as perfectly as can be done by pressure without damaging the goods.

The regular form of Meadows Washer is operated by a very efficient little electric motor of one-fifth horse power, but if desired other power can be substituted. Only the best materials are used in the construction of the machine and all metal parts that are likely to come in contact with the washing are galvanized. It is built to withstand the hardest service and is guaranteed by the makers to be so simple to understand that it is not likely to get out of order. Anyone can care for it and all working parts are so protected that there is no danger of injury, even to the most inexperienced person. The company have prepared a catalogue containing many illustrations and a detailed description of their washer, and those desiring a copy can obtain the same by writing them at the above address.

Hack Saw Blades and How to Use Them

HACK saws are indispensable to every metal worker. Everyone who uses hack saws knows that the best is the cheapest. Breaking hack saw blades uses up time and patience. The Fulton tungsten steel hack saw blades, sold by Montgomery & Co., Inc., 105-107 Fulton Street, New York City, U. S. A., are high grade saws at a moderate price. They are made in all sizes and a full assortment is always carried in stock. Shipments are made without delay after receipt of the order.

This company also carry a complete stock of all up-to-date tools and machinery for all branches of the mechanical trades.



Skilled workers in metal demand the best hacksaw blades obtainable because they economize time and patience

The following suggestions offered by Montgomery & Co., for the benefit of purchasers and users of their Fulton tungsten steel hack saw blades will be found interesting and instructive:

"When hack saw blades are used in a hand frame bear gently on the forward stroke and lightly on the return. Use a fine blade on all sheet metal, tubing, very hard steel, solid brass, copper, or gas pipe. Do not allow the blades to slip when sawing with a hand frame as it has a tendency to dull the blade. Never start a new saw in an old cut as the set is wider on a new saw and the blade will bind or buckle.

"On power blades start a new blade with the least possible weight and increase it gradually as the teeth wear. Do not run over 50 strokes per minute.

"For angle iron, heavy structural iron, heavy cold rolled steel, iron bars, and all heavy work, use 10 teeth per inch, .049 in. or .065 in. gauge thick.

"For angle iron, solid bars, machine steel, steel shafting, etc., and all light power blades, use 14 teeth per inch.

"On the hand blade use 16 or 18 teeth. On tool steel, iron pipe, light angle iron, hard metals, and general all round work 18 teeth per inch. On iron or conduit pipe 24 teeth per inch is best adapted, although some have been quite successful with 18 teeth.

"On steel rails 14 teeth per inch is best adapted. On thin wall pipe, sheet metals over 20 gauge, 20 teeth per inch.

"On the hand blade, very thin sheet metal, very thin tubing, 32 teeth per inch.

"In ordering always give the length, width and thickness of the blade and number of teeth required. If you are not clear on this subjet tell us the use for which they are intended and we will give you a blade particularly adapted to your requirements."

A Reliable and Durable Roofing Composition

BUILDERS, contractors or anyone contemplating the erection of a new building or the repairing of the roof of an old one will probably find it profitable and interesting to investigate the advantages claimed for the "Wonderseal Plastic Roofing," by its manufacturers, the Republic Paint & Lead Works, Cleveland, Ohio, U. S. A. This material, which can be applied to any roof, new or old, with a trowel, is a composition having a waterproof gum base in which there is incorporated long-staple shredded asbstos, forming a substance that is impervious to water, that is unaffected by changes of temperature and that is practically fireproof.

Wonderseal Plastic Roofing is remarkably durable, exposure to the air simply having a hardening effect, so that in time it acquires a close resemblance to stone—which as a matter of fact it really is, rock asbestos, the waterproof gum base being only a binder and providing the elasticity necessary for preventing cracks or fractures caused by its being subjected to alternate periods of heat and cold.

This roofing composition is especially desirable for the repairing of old roofs, for it possesses wonderful adhesive qualities and can be applied to material of any description, metal, wood, ready roofing, paper, etc., the only difference being that when it is used on corrugated metal or old shingles a somewhat larger quantity will be needed to cover a given space than when it is placed on a smooth surface. It is also very economical, as the initial cost is low and it requires no painting. Wonderseal is probably the very best material that can be obtained for repairing leaks, as it sinks into and seals all holes, pores and crevices and immediately stops all rust, corrosion and decay and prevents further deterioration. It also affords the best means for preventing leaks around the flashings of skylights, trap doors, roof openings, etc., or any other place where the wind is liable to force in the rain.

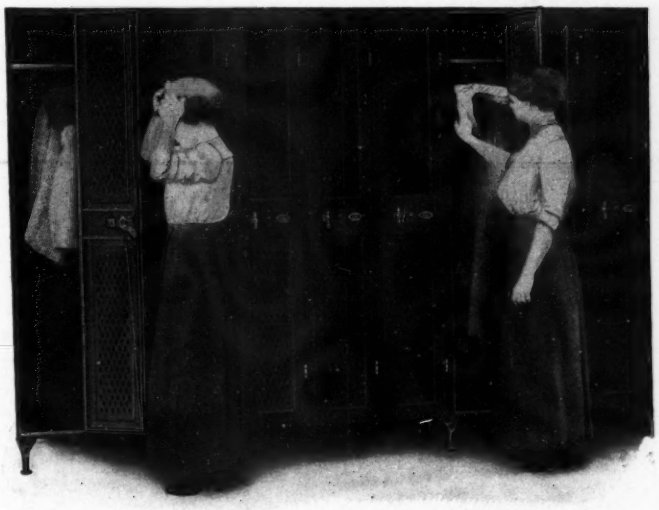
Plastic roofing is easily applied to any surface and is durable in any climate

As a roofing for buildings in places where it is necessary to collect the rainfall, Wonderseal cannot be excelled, because it imparts no taste, color or odor to the water, which can therefor be used with impunity for drinking purposes by men or animals.

Complete details regarding Wonderseal and the many uses for which it is admirably adapted are given in a catalogue that is being distributed by the company, a copy of which will be sent to any address in the world without charge, upon application.

Advantages of Steel Wardrobes, Bookcases and Closets

THE superiority of steel for the construction of lockers, closets, cupboards, shelving, bookcases, etc., under certain conditions, is generally recognized. Among the advantages claimed are that such compartments are fireproof, sanitary, not affected by the attacks of insects, extremely attractive in appearance, economical in space, moderate in price and, when properly finished, durable and impervious to dampness and climatic changes. The manufacture of these articles is a highly specialized industry and is practicable commercially only on an extensive scale, because to overcome the high productive cost it has been necessary to design special machinery and dies. This has been successfully accomplished, and there



Steel wardrobes of this type are much used in department stores, offices and other places where many persons are employed

have also been added during the course of development a number of improved features that place steel equipment of this kind in a class by itself.

The steel wardrobe shown in the accompanying illustration is an excellent example of these products. It is largely used by department stores, clubs, bowling alleys, baths, factories and large business establishments requiring secure individual receptacles for clothing or other articles belonging to their employees, customers, etc. In every way these wardrobes are much superior to closets made of wood. They do not harbor germ-laden dust, mold, offensive odors or insects, and are thoroughly ventilated. The bodies are very substantially constructed, steel of not less than 24 gauge United States Standard or 22 gauge B. & S. (Brown & Sharpe) being used. The supporting frames consist of special drawn steel angles 1x1 inch of not less than 14 gauge U. S. S., while the back is framed with 1x1 inch angles and all joints are welded, which not only improves the appearance but eliminates all bolts.

The doors are double paneled and made of steel not less than 18 gauge U. S. S. or 16 gauge B. & S., reinforced with channel shaped frames to insure rigidity. The doors fit perfectly and are provided with a locking device operated by a malleable iron door handle. These lockers are designed so that they can be shipped "knocked down." They are very easy to assemble and the welded frames insure perfect alignment and absolute stability.

By taking out the rod and substituting shelves, the wardrobe may be easily changed to a cupboard, as it is built with the same device for shelf adjustment. This cupboard is a perfect cabinet for the storage of office supplies, small tools and other articles of value. It is particularly useful for storing articles of different sizes, on account of the adjustable feature of the shelves, which may be placed as closely as one inch apart.

An illustrated catalogue giving specifications on these lockers, as well as those of other design and a wide variety of steel cupboards, sectional bookcases, etc., can be obtained by writing to Terrell's Equipment Company, Grand Rapids, Mich., U. S. A.

Big Ranch Orders Alfalfa Cutters

AN order for two large alfalfa cutters, equipped with recutting alfalfa meal machines, was received recently by the Smalley Manufacturing Co., Manitowoc, Wisconsin, U. S. A., from one of the largest ranches on the Pacific Coast of America. The ranch is about ninety miles long and twenty-eight miles wide. It furnishes the San Francisco markets with some 300 head of beeves daily.

A New and Popular Delicacy

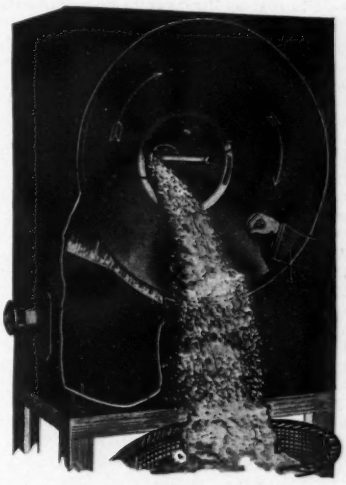
ONE of the most popular delicacies in the United States, and one for which there is a steady and increasing demand, is what is known as "popped corn," made from a small and compact kind of maize that is

A Crispette machine in operation

peculiarly adapted for popping when held over a flame. Popped corn is relished by all classes of people, and in addition to being extremely toothsome, is wholesome and very nutritious. The maize from which it is made is easily raised in almost every country, and a small quantity of seed produces a considerable crop.

While popped corn has been used in the United States for many years, a great impetus was given to its consumption by a special process for converting it into a delicious confection. The commercial demand for this product has become so great that special machinery has been devised to make it in large quantities, and a great many of these machines are now in use, not only by manufacturing confectioners but also in retail stores in the shopping districts of the large cities, in small shops at watering places and seaside resorts, in public parks, and everywhere, in fact, where crowds assemble for recreation or amusement. These devices have proved almost uniformly successful and have brought large profits to those using them.

At first no effort was made to introduce these machines or their product—which is known as "Crispettes"—in foreign countries, because pop corn is not grown much outside of the United States; but recently a few of them were sent abroad. None of the purchasers understood anything about pop

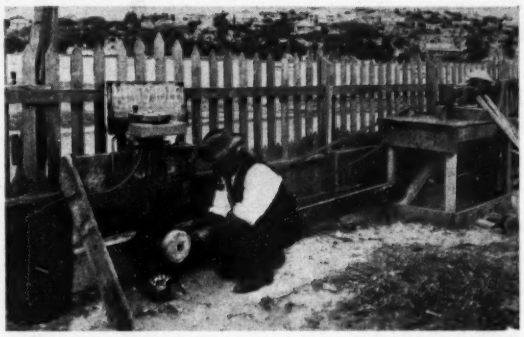


The corn popper used in making Crispettes

corn or the business, and they engaged in the new enterprise as an experiment. Nearly every buyer, however, has reported very satisfactory results, and the concensus of opinion is that "Crispettes" have immediately acquired popular favor wherever they have been introduced. One man in Dominica, B. W. I., for example, made large and profitable sales. Another buyer, in Spain, quickly used up the corn sent with the machine and has since made arrangements for a supply of 3,000 pounds every two weeks. Jobbers of pop corn report increasing shipments to foreign countires, which indicate that the demand for this delicacy abroad is growing rapidly. It is believed, however, that most consumers will soon raise their own pop corn, as this can be done easily in any climate.

The W. Z. Long Co., 49 High Street, Springfield, Ohio, U. S. A., make and sell the machinery and utensils for preparing "Crispettes" in large quantities at a very low cost. Their new model machine, especially for export, is designed so that beginners can at once obtain satisfactory results. They also give the names of jobbers from whom all the necessary corn can be obtained, or will supply the maize at cost price, together with formulas and instructions in any language. Those desiring more information regarding popped corn and "Crispettes" should address the company as above for catalogues and other literature.

In Samoa the modern boat with its detachable motor has supplanted the picturesque native craft in the harbor



This shows a 2 h. p. Evinrude being used in Australia to drive a grindstone, an emery wheel or a circular saw

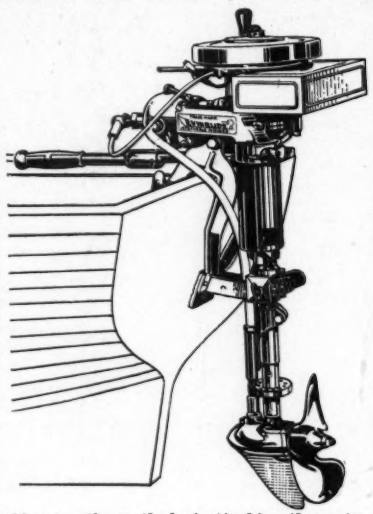
Row Boat Motors Used for Many Purposes

AMONG the evidences of an article's merit are the wideness of its geographical distribution and the varied class of its purchasers. The Evinrude rowboat and canoe motor is not merely a pleasure machine. It fills many practical requirements, and it is used in nearly every country in the world, even in regions little touched by civilization.

Among the governments that are using Evinrude motors in their war, navy or lighthouse service are the United States, Austria, Roumania, Russia, Denmark, Sweden, Holland, Italy, Ecuador, Brazi., New Zealand, Straits Settlements, India, British Guiana, Queensland, British Honduras, Argentina, England, Germany, Algeria, France and Mexico.

The Evinrude motor is used on all sorts of craft. It is attached to native dugouts on the Magdalena River, in Colombia, South America. These boats are hollowed from the trunks of trees, and range in size from 32 to 40 feet in length and from 24 to 33 inches in width. These motors are used at life-saving stations. At one on the Great Lakes, in America, the boat to which the motor is attached runs between the lighthouse and the shore. It is equipped with runners so it can be pulled up on the beach and across the ice and snow in winter. This also protects the propeller.

The Evinrude motor need never be idle. A man in Freemantle, West Australia, for instance, uses a 2 horsepower motor for driving a circular saw, an emery wheel or a grindstone. The gear housing rests on a wooden block to steady the belt pull and prevent vibration when full engine power is used. It is also employed by farmers, dairymen, etc., for many labor-saving purposes.



Showing the method of attaching the motor to the boat

This motor is also used on unusually heavy boats. A coal scow, for example, was equipped with a 3½ horsepower motor. The scow was 12 x 18 feet, 28 inches deep and carried about 8 tons. The ditch which it navigated was 48 feet wide at the top and 14 feet deep. With the motor this craft made a speed of 4 miles per hour and was easily handled.

To detail all the uses of the Evinrude motor and to print all the testimonials that the manufacturers have received from pleased purchasers would fill a fair-sized volume. By addressing the Evinrude Motor Co., Melchior, Armstrong & Dessau, Exclusive Foreign Distributors, 114 Broad Street, New York City, U. S. A., descriptive literature, prices, etc., can be obtained.

Sandusky Portland Cement Co.'s General Office to be in Cleveland

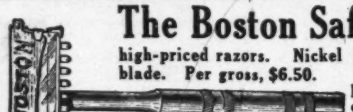
THE general office of the Sandusky Portland Cement Company, which has been located in Sandusky, O., since the organization of this company, will be moved to Cleveland, O., on August 1, 1915. The Cleveland office is already the headquarters of the treasurer, secretary, assistant manager and directors. The offices of the president, general superintendent, sales, publicity and accounting departments will be added to these. All will be located in the Engineers' Building.

The business of this company has increased greatly in the past few years, and the change was necessary in order to handle all matters with the utmost promptness.

Traveling in the tropics is a pleasure when a motor is attached to the boat. The picture is from British Honduras

On the Magdalena River, Colombia, South America, the native boats, hollowed from tree trunks, use Evinrudes

The Boston Safety Razors Will shave just as clean and comfortably as the high-priced razors. Nickel plated holder and handle. First class steel blade. Per gross, $6.50.



Razor Style E

Estimates given on any article in stamped metal. Send for catalogue and prices. Correspondence solicited. Agents wanted.

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